INSIDE: THE MISSOURI'S DRY FLY BLUES

Montana Outdoors

MONTANA FISH, WILDLIFE & PARKS | $4.50

MAY-JUNE 2025

PHANTOM CATS

Unveiling the secret lives of lynx

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CAMPING FOR CATFISH

OK BOOMER, LET'S GO BIRDING

WHAT MAKES WOOD TICKS TICK

A HALF-CENTURY OF CITIZEN SCIENCE

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MOTLEY CREW Rarely seen white-faced ibises mingle with more common birds in June at Benton Lake National Wildlife Refuge. New to birding? Learn how to get started on page 12. Photo by Eric Heidle

COVER Along with slightly longer tufted ears and a longer black-tipped tail, Canada lynx are leggier, larger-footed, and grayer than bobcats. Learn more about them on page 18. Photo by Zack Clothier

DEPARTMENTS

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Age-old wisdom

Thank you to Tom Dickson for the well-written Sketchbook essay on aging ("Seeing the open doors," September-October 2024). At age 66, I have been grappling with this same issue. Even just a few days of backcountry elk hunting may not be in my playbook anymore. It's quite a rotten turmoil to be in, considering that I spent 20 years as a rough-and-tumble Green Beret. I'm afraid those rigorous days are past. But, as you wrote, we do have other options.

John M. Onofrey
Heron

Taking issue with owls

I have a problem that hopefully you'll be able to solve. My wife has a *Strigiformes* fixation, and she's threatened to rip your "Who's Who? Good-enough guide to owls" out of the March-April 2025 issue of *Montana Outdoors*. I haven't even had a chance to open the magazine yet because she grabbed it. In the past, you ran a similar "Good-enough guide" to Montana raptors, which we keep in our vehicles to have close at hand. I had been wondering if you'd ever do a similar one for owls. Please help me so I can at least get one read-through of *Montana Outdoors* before she heists off with it.

Dan Olson
Butte

Editor replies: We sent Mr. Olson and his owl-loving wife Barb an extra copy of the March-April issue.

GOOD ENOUGH GUIDE
WHO'S WHO?
The "good enough" guide to identifying Montana's 15 owl species
BY ELLEN HOROWITZ
In the dawn light of midwinter, a small bird lands atop a spindly spruce. At first glance the rotund form appears headless, until I peer through binoculars and see the shoulder-width head and big eyes of a northern pygmy-owl staring back. It's easy to forget how little these owls are.

Kudos to the "Clio" edition

Thank you for the owl-themed issue of *Montana Outdoors*. My 101-year-old mother Clio still shops, attends women's club functions—and enjoys reading this magazine. She's also a lifelong owl fan who collects owl-themed jewelry, clothing, sculptures, and various trinkets. So as you can imagine, the March-April 2025 issue was her special "Clio" edition.

Dennis Merkel
Billings

What's up on whirling disease?

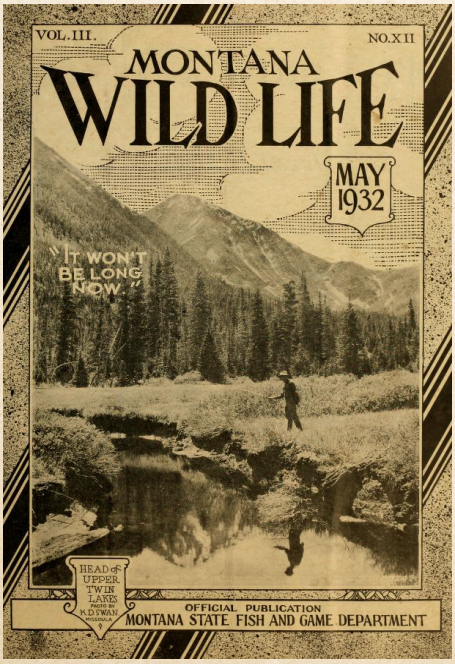
About 20 years ago, there was much worry and talk about how whirling disease was destroying trout populations, with many new rules and precautions (no felt wading boots, disinfecting gear, etc.). I haven't heard much about the issue for quite some time now. My medical background would lead me to speculate the weaker trout have died off and the remaining fish have developed natural immunity and are happily enjoying life in Montana's streams. Maybe a follow-up is in order?

Janis Moss
Reserve, NM

Editor replies: Great story idea, Janis. Look for an update on that in a future issue. ■

We welcome all your comments, letters, feedback, and questions. Write to us at Montana Outdoors, *P.O. Box 200701, Helena, MT 59620-0701 or paul.queneau@mt.gov*

PAST PERSPECTIVES



Excerpts from the FWP archive

On a Sunday evening in April 1932, radio listeners in Montana and nearby states tuned in to hear Walter H. Holliday, Silver Bow County's deputy attorney, deliver a message from Butte station KGIR, "The Voice of Montana."

According to a reprint of his radio address in the May 1932 issue, Holliday, then one of Montana's best-known sportsmen, laid before his listeners various reasons why they should subscribe to and read *Montana Wild Life*, the state Fish and Game Department's official monthly publication.

"*Montana Wild Life* provides the contact between the sportsman and the great outdoors," Holliday said during the broadcast. "I have read this magazine consistently, and in my judgment it has a message for every individual, man, woman and child who loves the great outdoors and who would like to preserve as far as possible the wildlife still existent in Montana."

Holliday was one of a series of eminent speakers who stepped up in 1932 to offer 15-minute broadcasts that stressed the department's achievements and the dire need for fish and game conservation.

"*Montana Wild Life* pleads for true sportsmanship, for the replenishment on the one hand of our trout streams threatened with depletion, and on the other hand, with preservation of the wild life which adds so much to the magnificence of our mountains and the picturesqueness of our plains and valleys," Holliday said.

He also quoted then-president Hoover, an enthusiastic fisherman: "The day is coming when there is going to be a premium on solitude. If a man can find a piece of land anywhere in this country where he can't hear a bell ring or a whistle blow, that's the land he will want for a home." ■

Fort Peck Potato Chip–Encrusted Salmon

By Tom Dickson | Preparation time: 5 minutes | Cooking time: 6-8 minutes | Serves 2-3

SHUTTERSTOCK

You don't need a Chinook salmon caught from the depths of Fort Peck Reservoir for this fast and fabulous recipe, though that would be cool. Other salmon fillets work just as well. But what kind?

There are five main species of Pacific salmon. The largest and most expensive is the Chinook (also known as king). Next down in size are the keta (chum), coho (silver), sockeye (red), and pink (humpie).

In Alaska and Washington, Chinook salmon are particularly prized for their high fat content and kept mostly for local sale and consumption. Pink salmon are used mainly for canning, and keta salmon are valued for smoking. Most wild-caught salmon we buy in Montana are the red-fleshed sockeye or the milder-tasting coho. All Pacific salmon sold in stores are wild-caught under strict sustainability regulations.

The most common salmon sold in grocery stores are Atlantic salmon raised in offshore fish farms. Compared to Pacific salmon, Atlantic salmon have a milder taste, softer texture, higher fat content (except Chinook), and a pale orange color. Unlike Pacific salmon, Atlantic salmon are commonly referred to by their country of origin (usually Norwegian but sometimes Scottish).

I found this recipe from *Cooks Illustrated* magazine many years ago and have made it dozens of times. It always works, but you need to follow the instructions closely. The recipe's author was searching for a way to incorporate potato flavor into his salmon and, after much experimentation, found that a crushed potato chip crust was the best solution. ■

—Tom Dickson is the previous editor of Montana Outdoors.

More recipes from *Montana Outdoors* at bit.ly/TastingMontana

INGREDIENTS

1 lb. skin-on salmon fillet, thawed
1 T. olive oil
4 oz. potato chips (I like the Kettle brand Krinkle Cut Salt & Pepper)
3 T. mayonnaise
1 T. Dijon mustard

DIRECTIONS

Pat dry fillet and cover with olive oil on both sides. Place on a cooking tray covered in aluminum foil. Set aside.

Place potato chips in a plastic bag and crush, using a rolling pin or wine bottle, to the consistency of thick bread crumbs.

Place oven rack in highest position and turn oven to broil. Place fillet under broiler, skin side up, and broil 5 to 6 minutes until skin turns dark brown. Flip fillet and broil for another minute.

Remove fillet. Mix mayo and mustard in a small bowl and spread on the cooked salmon. Spoon crushed potato chips on top, patting them flat into the mixture with a metal spatula or your palm.

Return to broiler and, watching carefully, broil for 30 to 60 seconds or until the chips begin to brown. Be careful not to let them turn black or they will be inedible. Remove the fillet and serve skin on, or remove the skin by sliding a sharp knife under the fillet.

FRESH OR FROZEN?

Truly fresh salmon—consumed within 24 hours of being caught—is generally the best tasting. But nearly as good is flash-frozen salmon, which is put in deep freezers on commercial fishing boats right after being netted. This is what you see in the freezer section of grocery stores. These fillets are best thawed overnight in the refrigerator. Once thawed, they should have a fresh sea smell or no smell at all, indicating high quality.

The fillets you see on crushed ice behind glass in grocery stores may be perfectly good as well, but it depends on how long they've been sitting there. After 24 hours, thawed fish starts to take on a fishy smell, which indicates that it's been exposed to air for too long.

Fillets are rarely truly "fresh" unless you buy them at a fish market in Seattle or Anchorage. If considering thawed fillets, ask the person behind the counter if you can take a sniff first. If it smells fresh, buy it and cook it soon. But if it smells fishy, buy a frozen fillet instead, thaw it yourself, and prepare it the next night. ■

Community pride

As I write this in mid-March, my hometown of Choteau is about to hold its annual Wild Wings Festival celebrating the incredible waterfowl migration through Freezout Lake Wildlife Management Area.

If you haven't experienced tens of thousands of snow geese erupting from the prairie and filling the skies at the foot of the rugged Rocky Mountain Front just south of Choteau, it's a sight (and sound) you won't ever forget. The festival is timed to overlap the peak of the migration, which is regarded as one of the world's great bird spectacles. In Choteau, that's both a major point of pride and an economic force as thousands of birders flock in, buying meals and booking hotel rooms while visiting.

Seeing my hometown rally around Freezout and the wonder of the bird migration is yet another prime example of how wildlife and the outdoors unite us all. They bond communities and bring us together in a way that's not controversial or political. An event like this is simply something we can all agree is really cool.

I suspect I now carry a little extra pride for Freezout since taking the reins last December as director of Montana Fish, Wildlife & Parks. FWP stewards this 11,333-acre wildlife management area, one of the most famous of our 70 WMAs. We also manage 56 state parks and roughly 350 river access sites, not to mention hundreds of fish and wildlife species. It's these places and species that make outdoor recreation one of the biggest economic drivers in the state. Love of the outdoors is why we live in or visit Montana, and it's woven into the fabric of our communities.

Downtown Choteau

Director Christy Clark presents FWP staffer James Washburn with the Outstanding Service Award.

As director I've also come to appreciate how deeply rooted our staff are in towns large and small across the state. I recently traveled to Bozeman to join Governor Greg Gianforte in honoring two brave FWP employees, James Washburn and JD Douglas, with the state's Outstanding Service Award for their exceptional response to a fatal traffic accident near Townsend in February.

Washburn, a Block Management technician in FWP's Region 3, was the first to arrive at the scene of the accident. Without hesitation he began administering first aid. Douglas, the assistant chief of Enforcement, arrived soon after and worked alongside Washburn to manage the scene with courage and professionalism. Their leadership provided crucial support in a tragic moment and helped ensure that emergency personnel could do their jobs more effectively.

After receiving the award, Washburn said he and Douglas were just neighbors helping neighbors, and he's proud of how his work with FWP allows him to serve not just the general public but also his local community. To me that shows why the work we do is so important to the Treasure State. We manage fish, wildlife, and parks that are indispensable to communities large and small, and we do it as vital members of those same communities.

Washburn noted one challenge of working in a small town is that everywhere you go, people try to feed you pie and coffee. "Not always good for my figure," he said. Yet his underlying message really hit home for me. Here in Helena, we do our best to communicate with the public using various platforms, including the pages of this magazine. But nothing matches having good people in communities across Montana building relationships that span years or even decades. FWP employees are available to answer questions and help relay thoughts and concerns, and they are also there to help in the face of sudden challenges and true emergencies like Washburn and Douglas did so bravely.

—Christy Clark,
Director, Montana Fish, Wildlife & Parks

FROM TOP: GARRETT TURNER / MONTANA FWP; TONY BYNUM

PAUL QUENEAU

HOOKED ON FISH

ADAM STRAINER
FWP Fisheries Division Chief, Helena

I'VE BEEN FASCINATED BY FISH and fishing ever since I was a kid growing up in East Helena. My grandma would drop me and my cousins off a few miles upstream of her house on Prickly Pear Creek and tell us to fish our way home. Her only request was to keep a few small ones for the frying pan. I'll never forget that freedom. Then most weekends in winter my grandpa would drive me out onto Canyon Ferry to ice fish off his tailgate until we'd filled a 5-gallon bucket with perch.

As an adult I discovered a career focused on two things I dearly love: fish and being outside. My first job after college was as a fisheries technician with the U.S. Forest Service's Livingston Ranger District. I eventually landed a position with FWP, and since then I've worked at nearly every rung of the ladder within the Fisheries Division. For the past 16 years I've been based in Helena, where I now lead the division as administrator (aka fisheries chief). I'm surrounded by a superbly talented staff focused on maintaining and enhancing our state's incredible aquatic resources. We work hard to ensure every person who lives or visits here can experience all Montana has to offer while also conserving these treasures for the next generation.

Speaking of which, one of my favorite pastimes is taking my kids trolling for Kokanee salmon on Holter Reservoir, where they're getting hooked just like I once did. As my partner and I sit down to plan vacations, she often accuses me of having a hidden agenda to find yet another way to go fishing. Guilty as charged.

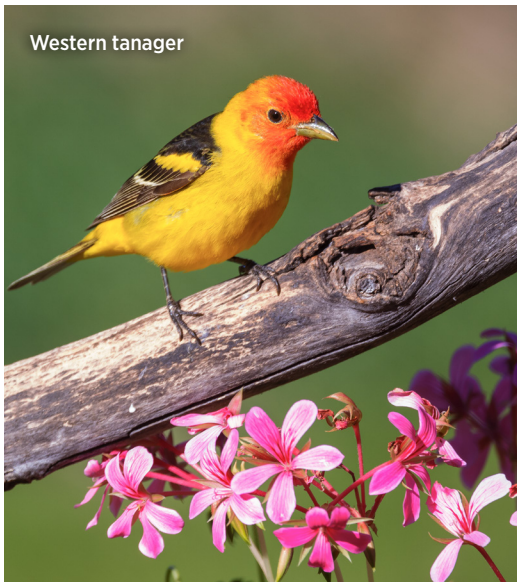
"You can't tell from this image, but the wind was howling and whipping the flowers violently," says Helena photographer **Kevin League** about the late May morning several years ago when he took this image of arrowleaf balsamroot wildflowers framing Castle Reef Mountain on Montana's Rocky Mountain Front. He was helping lead a photo workshop, and the frenzied flowers convinced him to employ a faster shutter speed and high ISO rather than the focus-stacking method their group had planned to use. "It was an ideal teaching moment," League says. "Adaptability is one of the most important traits of a good photographer. Rather than get frustrated, stay open to creative solutions and embrace the challenge to make the most of what nature dishes out—even if it's a stiff Montana wind." ■

PIECING TOGETHER AN ELK PUZZLE

All elk have a knack for disappearing into the thick forests of northwestern Montana, but newborn calves can be next to invisible. Researchers from Montana Fish, Wildlife & Parks and the University of Montana have devised a strategy that's helped them to find 91 calves the past two springs by scrutinizing GPS collar data from pregnant cows. Since the project launched in December 2022, researchers have collared 101 adult elk, 20 six-month-old calves, plus all 91 of the newborn elk they sleuthed out. This broad study based in Sanders County near Noxon aims to better understand herd health including survival and reproduction rates, nutrition, and predation. FWP has also collared nine mountain lions, seven black bears, and two wolves in the same area as part of the project. To see firsthand how biologists find and collar elk calves, scan the QR code on page 9 or visit youtu.be/vc7NJCZxaO8 ■ PHOTO BY NICK DANIELSON / MONTANA FWP

FWP

2.5 Weight, in grams, of the pygmy shrew, the smallest mammal in Montana. A penny weighs 3 grams.



Big Sky Bird Fest lands in Missoula this May

Bird lovers from across the West will converge on Missoula in late May for the 25th annual Wings Across the Big Sky birding festival. Held May 30 to June 1 at the Holiday Inn Missoula Downtown, the event includes a keynote presentation from Erick Greene, a University of Montana biology professor who is an expert in bird song and animal vocalization—"the language of how animals talk with each other," he says. The festival includes additional science talks, field trips led by local experts to explore the diverse bird habitats surrounding Missoula, and a buffet awards dinner with a live auction.

Visit **mtaudubon.org/events/wings** to register. ■

BEAR RELOCATION

Two grizzlies relocated to Yellowstone area

The lines on the map look like the doodling of a toddler. The pink line makes big loops that sometimes overlap. The green line is wound so tightly it looks like a big blob. Though they sometimes get close to each other, they seldom intersect.

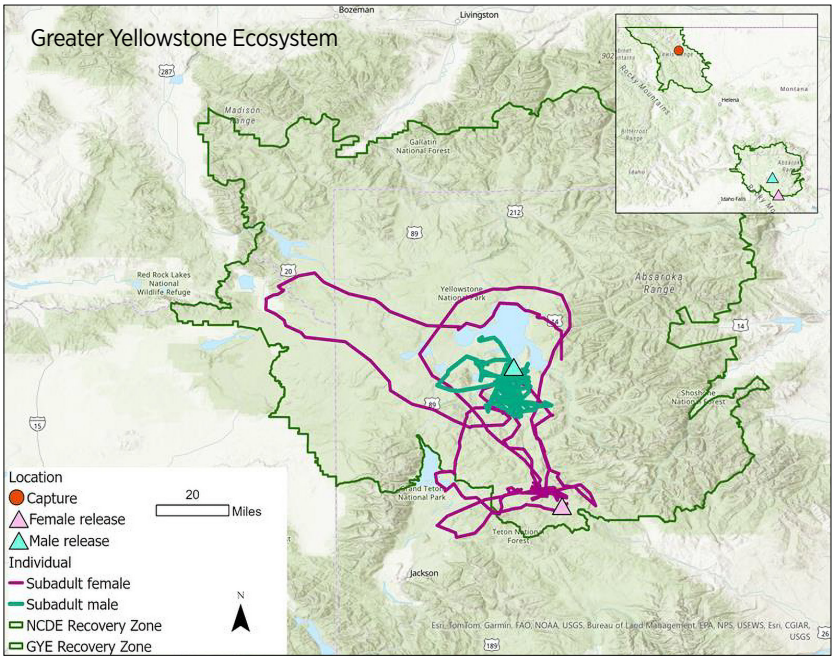
These lines reflect the movements of two grizzly bears relocated from the Northern Continental Divide Ecosystem to the Greater Yellowstone Ecosystem (GYE) this past summer to increase the genetic diversity of the GYE population.

FWP biologists captured a female grizzly estimated at 3 to 4 years old last July in the North Fork Flathead watershed. After fitting it with a GPS collar, they transported it to Wyoming, where they released it west of Dubois on the Bridger-Teton National Forest with help from Wyoming Game and Fish staff. Another 4- to 5-year-old subadult male was also captured in the North Fork Flathead around the same time and released on the south end of Yellowstone Lake in Yellowstone National Park with significant assistance from staff.

"We were looking for the ideal bears," says Ken McDonald, head of FWP's Wildlife Division. "It's actually not that easy to capture two bears that are prime candidates for translocation."

In this case, the ideal bears were subadult (older than cubs but not yet sexually mature), had no history of conflict, and weighed enough to make it through hibernation. Bears of this age are often in search of a permanent home range and more likely to stay put after being moved to a new area.

"We are very pleased to see that both bears have remained in the GYE, staying mostly within remote areas," says Cecily Costello, FWP grizzly bear researcher. "It's not always easy for a bear to adjust after being moved, but they seem to be settling in. Both appear to have found den sites for the winter." ■



MAKING TRACKS Colored lines indicate the paths taken by a pair of grizzlies relocated to the Greater Yellowstone Ecosystem this past summer to increase the population's genetic diversity.

FROM TOP LEFT: MIKE MORAN ILLUSTRATION; CINDY GOEDDEL; MONTANA FWP.

EDITORIAL STAFF

Changing of the guard at *Montana Outdoors*

Tom Dickson retired this past March after serving 23 years as editor of *Montana Outdoors*. He will continue writing the Tasting Montana recipe and Sketchbook column, as well as occasional feature articles as a freelance writer.

During Dickson's tenure, *Montana Outdoors* won more first-place awards from the Association for Conservation Information than any other publication. ACI members include natural resources communicators from state, federal, and Canadian parks and natural resource agencies as well as private conservation organizations.

"It's truly been an honor to convey the wonderful and important work of Montana Fish, Wildlife & Parks to our readership over the decades," says Dickson. "From the very beginning, Luke Duran, my art director for 23 years, and I recognized the excellence of this agency and its staff and programs. Our goal always was to produce a top-notch magazine that conveyed that excellence."

Paul Queneau and Amanda Reese

Duran is now art director for *Montana The Magazine of Western History* and other publications produced by the Montana Historical Society. He continued to design this magazine as a contractor until this past February, when he handed the reins to Amanda Reese, the new art director for *Montana Outdoors*.

Tom Dickson (right) hugs Luke Duran at Tom's retirement party.

Reese comes to FWP with a decade of experience in design and creative direction for the Montana Lottery. She grew up in Livingston, earned a BFA in graphic design from Montana State University, and is chair of the Helena Public Art Committee.

Paul Queneau joined the magazine as the new editor, succeeding Tom Dickson. A 2002 graduate of the University of Montana School of Journalism, Queneau spent 22 years working as an editor for *Bugle* magazine at the Rocky Mountain Elk Foundation.

"We began the search for a new editor last fall and Paul really impressed us with his passion for conservation and the outdoors, his awareness of FWP and our mission, and his impressive résumé as an editor, writer, and photographer," says Greg Lemon, chief of FWP's Communication and Education Division. Queneau was a frequent freelance contributor to *Montana Outdoors* and is a former president of the Outdoor Writers Association of America.

"*Montana Outdoors* has a long legacy of excellence, and I'm thrilled and honored to help write the next chapter," says Queneau. ■

WILDLIFE THREATS

Toxic shrub kills Bitterroot Valley elk calves

For the third time in a decade, elk died in the Bitterroot Valley this past winter after browsing on Japanese yew (*Taxus cuspidata*), an attractive, easy-to-grow, and deadly poisonous evergreen shrub. Of the five elk calves found dead near Florence in January, two were necropsied and discovered to have bellies full of Japanese yew, which along with other nonnative yew, is poisonous to elk, mule deer, moose, livestock, pets, and people. Strangely, white-tailed deer seem to be unaffected.

Even a small amount of non-native yew can kill; a fatal dose for elk amounts to less than 1 percent of body weight, says FWP veterinarian Dr. Jennifer Ramsey. Yew poisoning was also suspected in the deaths of several calf elk in the Bitterroot during the winter of 2016-17 and again in 2019. In Idaho, the plants have poisoned moose, elk, and in one case, a herd of 50 pronghorn.

Even if non-native yew has been growing in a yard for years without incident, "it's like a ticking time bomb," says Rebecca Mowry, FWP wildlife biologist in Hamilton. "Heavy snowfall can push animals into areas they don't normally use, and if you have just the right conditions, there's always a chance they will come through and find it."

Homeowners should inspect their yards and remove any non-native yews (county extension offices are a great resource for plant identification). All parts of the plants—including trimmings, roots, and seeds—should be disposed of in a landfill or similar place where animals can't reach them. Even the ashes are toxic. ■

Japanese yew

FROM TOP: PAUL QUENEAU / FWP; ANGIE HOWELL / FWP; SHUTTERSTOCK

Birding *for* Boomers

And everyone else brave enough to embrace one of the world's most rewarding and frustrating activities

By Sneed B. Collard III. Illustrations by Tanner Barkin

It's no secret that Montana has an older population. Our median age ranks among the highest in the nation, with only a handful of states claiming a greater percentage of people age 65 and older.

Many view that as a bad thing. After all, it limits the size of our workforce and makes it less likely that Taylor Swift will include Billings or Missoula on her next world tour.

On the other hand, as the years stack up, so do wisdom and experience. Even better, it means more of us have time to pursue the world's greatest activity: birding. ▸▸

THE LAST BEST BIRDING STATE?

As its name suggests, birding (also known as birdwatching to the uninitiated) is the practice of looking for, identifying, and observing birds. One of its best features is that you can do it almost anywhere. You can bird in your yard. You can bird while taking Fido for a walk. You can bird while hiking, riding, fishing, and hunting. An added bonus for Montanans is that we happen to live in one of the nation's best birding states.

Some might argue with that last statement. If you look at the total number of bird species ever found in the Treasure State, it sits decidedly in the middle of the pack. According to eBird, a Cornell Lab of Ornithology website, 447 bird species have been recorded in Montana. That's wildly lower than, say, California with its 715 species or Texas, with 681.

Several factors help to compensate for our modest total. The first is our incredible variety of habitats. Within our state's borders you can find moist Pacific conifer forest, high-altitude tundra, big basin sagebrush country, juniper forest, and much, much more. Montana is one of the last strongholds for prairie birds. We also have all-important burned forests, which provide essential habitat for many bird species, some of which are primarily found only in recently charred areas.

This amazing variety of habitats provides Montana birders with a huge diversity of birds to discover. It also means that some of the coolest bird groups are wonderfully well-represented. Yet what really sets Montana apart from other states is the spirit of adventure that birding here provides.

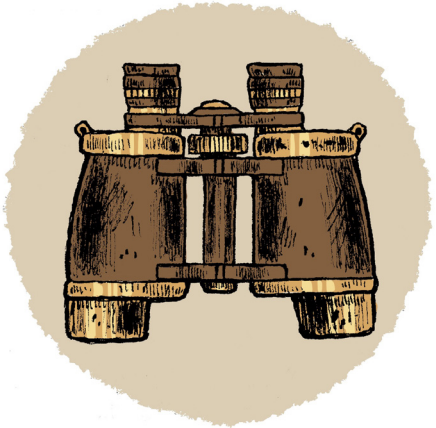
OFF THE BEATEN BIRDING TRAIL

Sure, you can go to Texas or California and see more species than you can in Montana, but you will be traveling over extremely well-trodden ground. So many people—including so many birders—live in those states that it's much more difficult to make discoveries on your own. Most good birding places are well known, and when rarities show up, a tornado of other birders roars in to take a look.

Montana offers a much different experience. While the Treasure State has a respectable, tight-knit birding community, rarely will you find a place overrun with people. I often go birding with my son Braden, and some of our best experiences have been when we decided to venture off into a new, unfamiliar area.

Because fewer birders live here, the possibility of discovering something rare or exciting is much greater. Only last summer, we pulled over along a dirt road leading to Browns Lake near Lincoln. We got out and Braden spotted a bay-breasted warbler—only the third or fourth ever recorded in western Montana! That sort of thing doesn't happen every day, but you will be astonished by how many avian surprises show up once you get out and explore.

Sneed B. Collard III is a frequent contributor to Montana Outdoors *and author of more than 100 books, including his most recent,* Birding for Boomers, *available from Mountaineers Books and many local booksellers.*



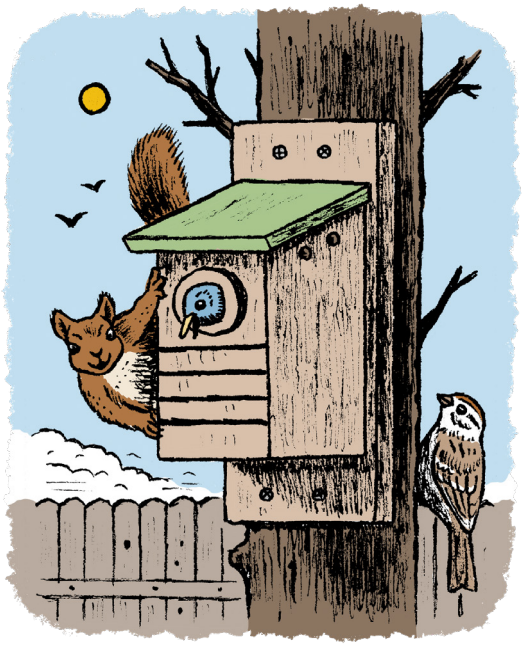
We spotted a bay-breasted warbler—only the third or fourth ever recorded in western Montana!

GEARING UP

Now that you know what a wonderful place Montana is for birding, let's get you outfitted. Fortunately, it requires very little equipment. At its most basic, all you need are a pair of binoculars and a field guide. If pressed for cash, you can probably borrow these from Uncle Bob or a friend who has them collecting dust around the house. But if you can swing it, I recommend that you invest in these items yourself.

If you are a hunter, you may already have a solid pair of field glasses. If not, look for 8X42 or 10X42 binoculars, the most common and convenient specs for birding. The first number, 8 or 10, refers to the magnification of the lenses. I like 10X magnification because it gives me a closer look at birds, but it also presents a narrower field of view, so others prefer 8X, which yields a steadier (and wider) view in shaky hands. The second number, 42, refers to the diameter in millimeters of the objective lenses—or "big end"—of the binoculars. The larger the diameter, the better it transmits light and details. It also means more weight to lug around, but 42 mm strikes a nice compromise between clarity and a chiropractor visit.

As a general rule, buying ultra-cheap binoculars is a waste of money. They likely will produce crummy images and often break quickly. The sweet spot for a solid pair seems to be $200 to $500, and many companies make excellent optics in this price range including Nikon, Vortex, Vanguard, Zeiss, and Bushnell. You can often find sales on binoculars near the end of hunting season when retailers are dumping inventory. If you're shopping at a sporting goods store, keep an eye out for discontinued floor models, which can garner extra discounts.



Sound ID on the Merlin mobile app can listen to bird songs and calls and accurately identify 95% of them.

Once you have your optics sorted, it's time to get a field guide. You can download excellent free bird guides onto your phone. The best are Merlin Bird ID by Cornell Lab of Ornithology and the free Audubon Bird Guide app from the National Audubon Society. Most birders, including myself, also like to have a physical, bound field guide handy. Hundreds have been published, but for your first guide, I recommend the latest edition of *The Sibley Guide to Birds*. Braden and I consider this our birding bible. With concise descriptions, range maps, and gorgeous illustrations to help with bird identification, you will be hard-pressed to find a better beginning reference. It's also the perfect gift to request for your next birthday!

GETTING STARTED

With binos and field guide in hand, it's time to start looking at birds. One common way to do this is to set up a bird feeder in your yard. A feeder can teach you to identify a large variety of common Montana birds. Depending on the season, you might spot more unusual bird species, too, such as rosy-finches, redpolls, and lesser-seen sparrows.

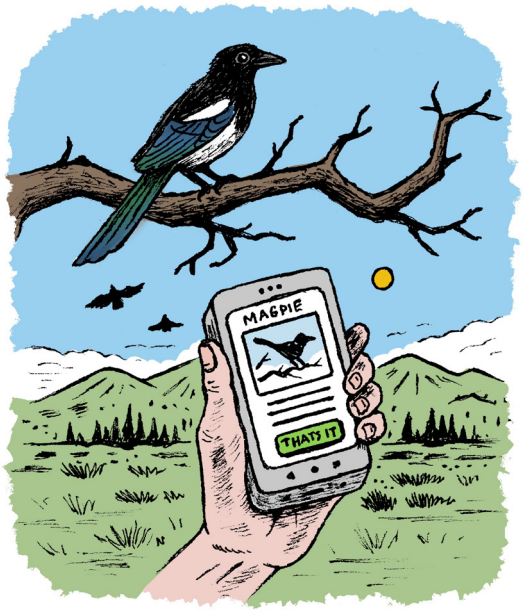
Perhaps a simpler way to begin birding is just to take binoculars with you wherever you go. To keep from getting overwhelmed as you spot new birds, pick only one or two to study and identify on each outing. If you have a camera with a decent zoom lens, take photos so that, back at home, you can pore over your field guide at leisure and figure out what you've been looking at.

In many places, local Audubon groups, nature centers, and adult education centers offer free and low-cost birding trips. I highly recommend these, as they help you connect with other birders in your community. They also speed up the learning process. I can't tell you how many times an expert has quickly pointed out the key features of a particular species—something I may never have stumbled upon just studying my field guide. While you're at it, don't ignore the many options on social media devoted to birding, such as the Montana Birding group on Facebook.

OVERCOMING BARRIERS

Many of us older birders have health issues or face other challenges that can interfere with our activities. Let me assure you that most of these can be accommodated. Shortly after I began birding, I was devastated to discover my hearing had begun to fade. This prevented me from detecting and learning different bird vocalizations. Getting hearing aids helped, but then along came a great tool called Sound ID, part of the Merlin phone app mentioned earlier. Using artificial intelligence, this app can listen to bird songs and calls in real time and accurately identify about 95 percent of them. My hearing will never allow me to become an expert at birding by ear, but hearing aids and Sound ID together allow me to still enjoy the wonderful vocalizations around me.

Mobility is another common issue for older birders. Fortunately, many natural areas such as Maclay Flat in Missoula and Riverfront Park in Billings have level trails that are easier to navigate. If even those are too much, Montana offers wonderful driving routes where you can see tons of birds. Freezout Lake, Benton Lake, Bowdoin, Ninepipe, and Medicine Lake are just a few state or national wildlife areas where birding from a vehicle is advantageous. If you savor solitude, almost any rural road in Montana can be a great birding route. Just be cautious about vehicles behind you when stopping to view a bird, and if you're driving slowly, make sure you turn your hazard lights on and stay to the right. Realize that even though you are out enjoying birds, others use rural roads for their everyday lives.

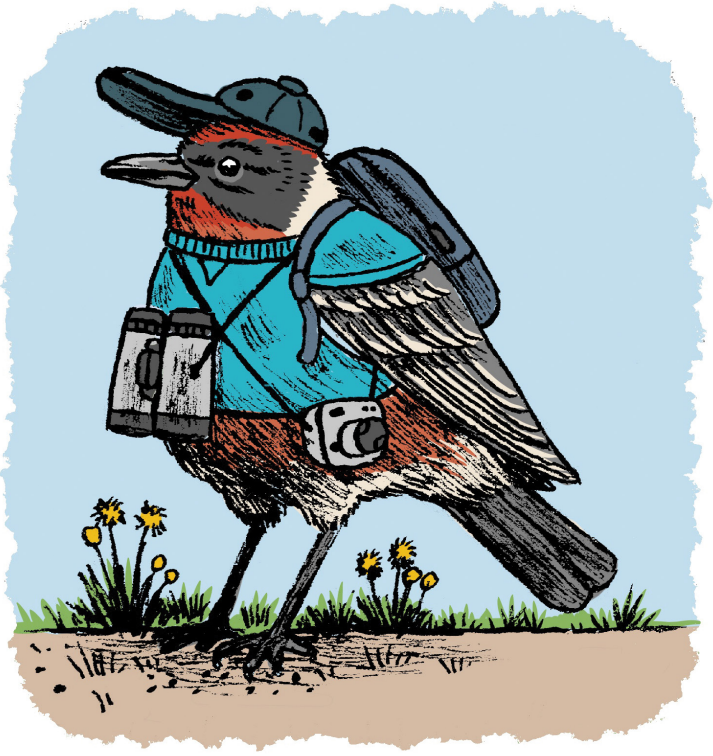


MONTANA SPECIALTIES

Montana is home to some of the coolest birds anywhere, including an astonishing 15 of 19 resident owl species in the United States. People travel thousands of miles to see great gray, snowy, flammulated, boreal, and northern hawk owls—yet we Montanans have them right in our backyard. Owls as a rule aren't easy to locate or observe, but the more you bird, the better you will become at finding them. (For tips, see "Who's Who," *Montana Outdoors*, March–April 2025.)

Woodpeckers are definitely my favorite group of birds, and here again, we Montanans luck out. Ten species can be found in our state, more than half of them year-round residents, including northern flickers as well as downy, hairy, pileated, American three-toed, and black-backed woodpeckers. Those last two especially love burned forests and, thanks to their aggressive drilling, create hundreds of holes for chickdees, wrens, nuthatches, bluebirds, and other cavity-nesting birds. In spring, Montanans can experience the additional excitement of seeing red-naped and Williamson's sapsuckers, red-headed woodpeckers (in the state's eastern half), and spectacular Lewis's woodpeckers, which nest in old cottonwood trees along rivers.

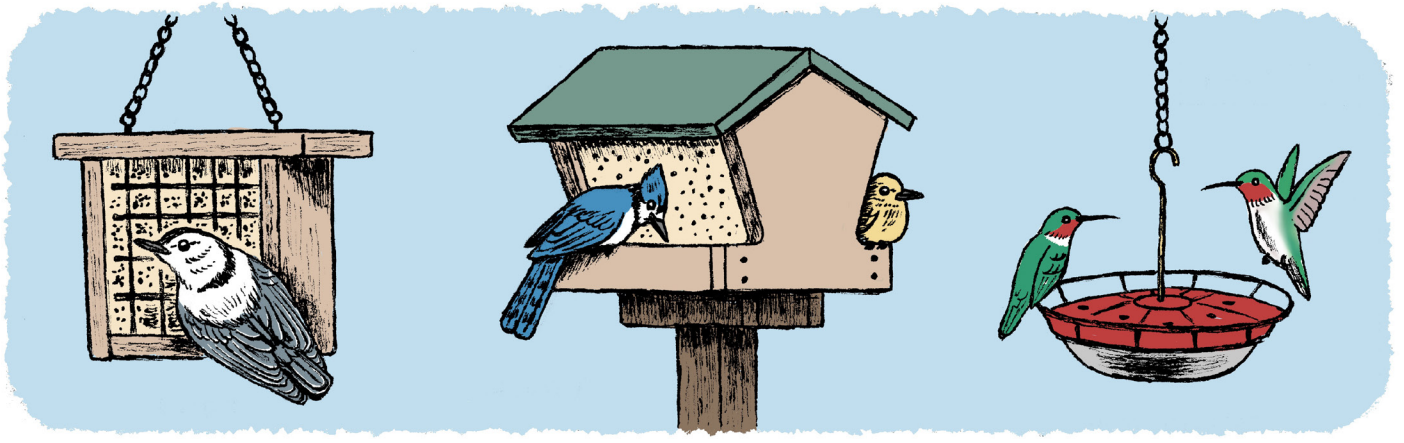
Grassland birds are yet another Montana specialty. In addition to the more familiar game bird species such as pheasants, sharp-tailed grouse, and gray (Hungarian) partridge found in these habitats, the state's large swaths of grasslands provide homes for threatened sparrow species, longspurs, and other songbirds that depend on unplowed, well-managed prairie lands to breed. [See "12 Little Brown Grassland Birds Every Montanan Should (Kinda) Know," *Montana Outdoors,* July-August 2024.] It can take some time to learn to identify the various grassland species, but as you build your skills, you will grow as enchanted with these birds as my son Braden and I have.



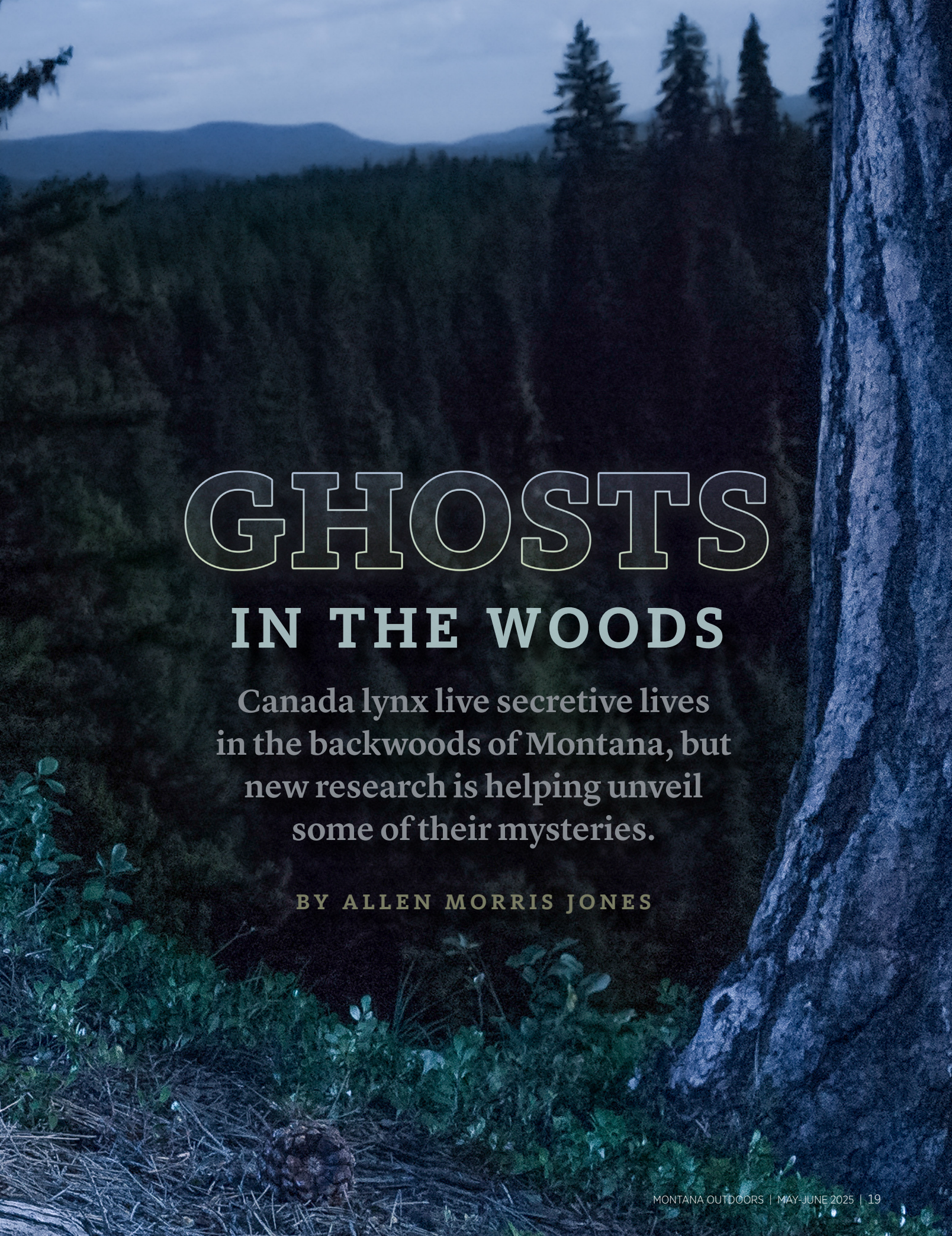
NO TIME TO WASTE

One of my big regrets is that I didn't start birding until I was in my mid-50s. My advice: Don't wait. Birding is an activity available to every person no matter your age, skills, finances, or health. It can help you meet new friends, become more physically active, stimulate your brain, and enjoy nature—and thus transform your life. Birding came along right when I began wondering what I was going to do with the years I had left. It gave me new passion and purpose. Trust me, it can do the same for you, whether you are a boomer or someone younger with even more days of birding ahead of you.

My advice: Don't wait. Birding is an activity available to every person no matter your age, skills, finances, or health.



FOREST ENIGMA Lynx are one of Montana's stealthiest carnivores. PHOTO BY ZACK CLOTHIER



GHOSTS IN THE WOODS

Canada lynx live secretive lives in the backwoods of Montana, but new research is helping unveil some of their mysteries.

BY ALLEN MORRIS JONES

BACKWOODS BLING Researchers bedazzled camera traps with CDs that provide beckoning flashes like a signal mirror to help lure in lynx.

Hear that?" asks Montana Fish, Wildlife & Parks biologist Nathan Kluge, gesturing toward the thick timber off to our right. The noise comes again, a plaintive, truncated *rowr*. Then another. Five or six in a row. Sound can be deceptive in the thick timber, but this could be 50 or 60 yards away. Maybe less. Kluge looks delighted.

"Mountain lion," he says with a grin.

We're in the northern Bitterroots in mid-May about 90 minutes from Missoula. Kluge is FWP's furbearer coordinator, who I've joined on this day along with carnivore specialist Tyler Parks to check camera traps as part of an ongoing lynx occupancy study. And while a complaining mountain lion isn't on their scientific bingo card, it's uncommon enough that it plugs a little extra voltage into the outing.

"Want to see if we can get a glimpse?" Kluge asks me.

"Um. Sure. Why not?"

We spend the next 20 minutes hiking in the direction of the sound, clambering over downfall and making an unfortunate amount of noise in the timber before finally coming back around to the camera trap. "Tried, anyway," I say.

Kluge nods, still enjoying the idea that we were just a few minutes behind a mountain lion. He pulls the screw-in steps from his backpack and considers the camera strapped to the tree overhead. "We should get to it, I suppose."

Allen Morris Jones is a frequent contributor to Montana Outdoors. *He lives in Bozeman.*

"In our study grid, if a given cell has more than 50 percent high-quality habitat, it's a spot we might be able to use to detect lynx across Montana."

Part of a study aimed at finding Canada lynx, this FWP camera-trap station has three elements: a motion-activated camera in a weatherproof housing mounted at least 10 feet up a tree to keep it above the snow; a battery-powered scent dispenser (beaver castor with a dash of catnip); and, in this case, a visual attractant in the form of a CD hanging loose from a string. With each breath of wind, it provides beckoning flashes like a signal mirror. "Cats don't have the sense of smell that wolves or bears do," Kluge says. "They can't smell the attractant from a mile away. You need something that catches their eye to draw them in."

We'd visited a camera trap for fishers (a furbearer related to American martens) a few hours earlier and a mile and a half off trail, but the lynx set, by contrast, was right on an old logging road. Lynx seem to prefer established trails when available.

"The home range for a female lynx is about 22 square miles," Kluge says. Using that metric for cell-sizing, he and other biologists laid a grid across a map of western Montana. "In our study grid, if a given cell has more than 50 percent high-quality habitat, it's a spot we might be able to use to detect lynx."

FWP biologists have identified 180 cells that are more than 50 percent high-grade habitat. "That defines our total core area for lynx," Kluge adds. "We're sampling about 90 of those areas [using camera traps], aiming to find out where they are and where they're not."

This occupancy study is part of a larger research effort with Idaho and Wyoming to demystify a species that has long proved elusive. By testing if lynx are present in the best available habitat, Kluge and his colleagues should, over time, get a sense of population trends within those core areas. As straightforward as that might sound, it has important ramifications for forest management and trapping regulations.

PHOTOS BY ALLEN MORRIS JONES

RANGY ROVERS Researchers have found that lynx in Montana have home ranges twice the size of those farther north due to fewer snowshoe hares. PHOTO BY ZACK CLOTHIER

CAN O' CATNIP State furbearer coordinator Nathan Kluge installs a battery-powered scent dispenser loaded with beaver castor and a dash of catnip to draw lynx in for photos.

LIVING BEHIND A CURTAIN

Lynx are fascinating animals, looking a bit like the work of a sculptor who started building a bobcat from the ground up, then went gung-ho with the feet and legs only to run out of clay near the top. Long-legged and heavy-pawed, the species carries a bobcat's wise, judgmental gaze, but wears a grayer, plainer coat with larger, air-quote tufts at the top of its ears and a slightly larger (though still short) black-tipped tail. Similar to bobcats, male lynx weigh around 22 pounds on average, females a little less.

Like mountain lions and bobcats, lynx are loners that need elbow room. Unlike their cousins, though, they're quite uncommon in the Lower 48. As a result, they are one of the least known of the major North American carnivores, going about their daily lives behind something of a curtain.

Ken McDonald, who is chief of FWP's Wildlife Division, says there is a good reason for that. "Montana is at the southern fringe of lynx range, so they have never been (or likely will be) widespread or abundant here."

Most lynx live in Canada and Alaska, but south of the border, five areas hold breeding populations: northern Maine, northeastern Minnesota, western Montana, north-central Washington, and northern Idaho. Since 1999, they've also inhabited southwestern Colorado after the state released 218 lynx into the San Juan Mountains over a seven-year period.

FUZZY LOGIC Lynx grow a thick winter coat to shrug off bitter cold and have long legs and saucer-sized paws to help them chase down snowshoe hares in deep snow.

Lynx look a bit like the work of a sculptor who started building a bobcat from the ground up, then went gung-ho with the feet and legs only to run out of clay near the top.

Thirty years ago, what little scientists knew about lynx populations came largely from trapping data, but trappers didn't always correctly differentiate lynx from bobcats, so the data were questionable. What biologists have learned since has come courtesy of a modest contingent of devoted scientists who, by and large, gather data the old-fashioned way. They're strapping on snowshoes and slogging through knee-deep drifts, clambering over deadfall to follow denning females back to their kittens. They're shoveling out stuck snowmobiles and eating half-frozen turkey sandwiches while warming their hands over cans of Sterno, or holding up antennae and twisting them around to get a clearer beep on tagged lynx. After setting up camera traps, they return nine months later to retrieve them. Then, squinting at their computer monitors, they crunch numbers to compile a season's worth of data.

Jay Kolbe, an FWP wildlife biologist in north-central Montana, spent nine years studying lynx starting in the late 1990s, including work for his master's degree. "We were finally able to ask questions that, for other species, had been answered a long time ago. We could investigate food habits, denning habitat, home range size, fecundity—all really basic ecological questions." Among other discoveries, Kolbe and his colleagues found that lynx are drawn to the kind of boreal spruce-fir forest you commonly find in northwestern Montana, especially blowdown thickets and heavy brush. The wilder and woolier it gets, the more lynx seem to like it.

DEEP SNOW, LOTS OF HARES

The life of a lynx is simple from some perspectives, but when it comes to adaptation, they are a walking, stalking, hissing argument for niche Darwinism. A thick winter coat allows them to shrug off bitter cold, and long legs and saucer-sized paws help them chase down snowshoe hares in deep snow.

"Because of their dependence on snowshoe hares, lynx are essentially only found where snowshoe hares are present, which are a prey species with specific habitat requirements," McDonald says.

So long as snowshoe hares persist and lynx can find a mix of wild country and just enough population density to find mates,

FROM TOP: ALLEN MORRIS JONES; KALON BAUGHAN

they're probably going to be all right. But take one of those elements away and they could have trouble. If the snowpack disappears due to warming winters, snowshoe hare numbers will likely drop as well, and along with them, isolated populations of lynx.

Because of their habitat specialization and presumptive vulnerability—as well as how little is known about the species—lynx have served as a kind of legal proxy, an unwitting rope in a tug-of-war among state wildlife agencies, the federal government, and environmental groups. Over the years, a series of lawsuits have addressed trapping practices, habitat designations, and forest management. Trying to unravel the complex political and legal context behind lynx management is a little bit like trying to hike over tangled blowdowns and thick brush, tripping every step of the way.

In 1994, the U.S. Fish & Wildlife Service (USFWS) ruled that lynx didn't warrant protections under the Endangered Species Act (ESA). But two years later, 15 plaintiffs challenged that in federal court, citing a lack of data about the species. The suit ultimately prevailed, and in 2000, lynx in the lower 48 states were listed as threatened. In 2017, the USFWS completed a species status assessment (SSA) of lynx, which includes an in-depth, scientific review of the species, the threats it faces, and the resources and conditions it needs to maintain populations over time. This assessment only applied to the Lower 48. Acknowledging the limits of this habitat to host large populations of lynx, the USFWS recommended lynx be delisted as threatened following a five-year status review. But litigation quickly followed from environmental groups that contended lynx populations and habitat were decreasing, problems that would only be accelerated by shorter, warmer winters.

After a court order and some years after they were obligated to do so, the USFWS in 2023 issued a draft recovery plan for lynx, as well as an addendum to the 2017 SSA. Among other things, the recovery plan aimed to conserve at least 95 percent of lynx habitat in each of six units over the next 20 years. The units include the five areas where lynx are now known to exist, plus the Greater Yellowstone area, and the plan set a minimum population size within each of those units. Montana's minimum population count was recommended to be 200 lynx, based on estimated carrying capacity, home range size, and amount of viable

CLASSIC TAKEDOWN An early photo trap captured the exact moment a lynx pounced on a snowshoe hare, published in a 1966 photo essay by Ed Cesar in *Popular Science Monthly* that provided instructions for creating one of these devices.

CANADA LYNX
Lynx canadensis

■ CURRENT RANGE

The Canada lynx and snowshoe hare have nearly the same geographic range and a long history of interaction. This has resulted in a special predator-prey relationship.

Did you know?

Lynx may save their kills to eat later. They have excellent memories for relocating these caches.

SNOWSHOE HARE
Lepus americanus

■ CURRENT RANGE

SOURCE: AMERICAN MUSEUM OF NATURAL HISTORY

> **“What we’ve seen so far are lynx detections in all expected areas and some in areas where we were not particularly expecting them.”**

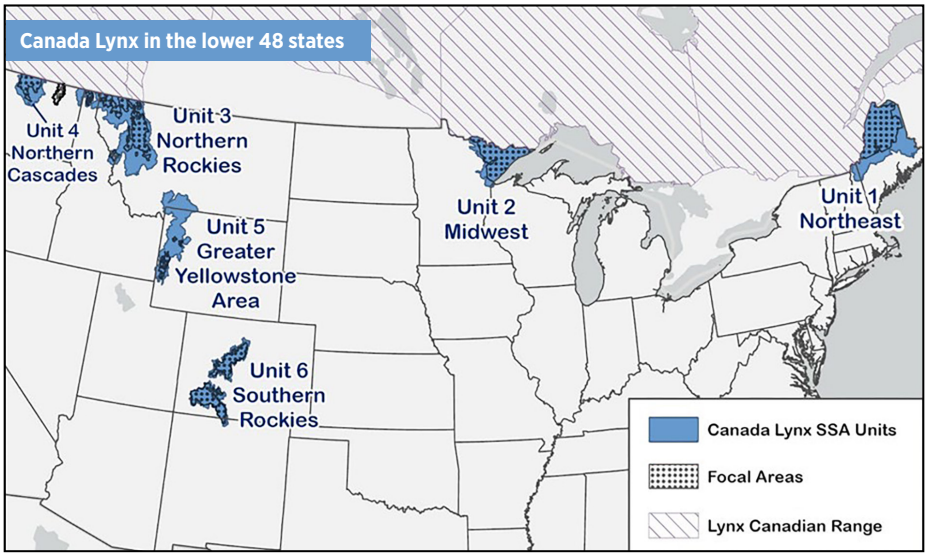
habitat. The recovery plan also stipulated habitat connectivity between the island populations, which would allow for genetic diversity necessary for long-term survival. These directives stand to have a major effect on forest management in the future.

FWP’s McDonald expresses frustration about the listing and the draft recovery plan. “The draft said that lynx are in pretty good numbers and where they need to be,” he says. “But then there’s uncertainty about what future winters will look like, so the draft also says they need to be monitored for another 20 years. We at FWP interpret that as saying lynx are already there and so now we just need to keep them there.

“From our perspective, this puts a black eye on the Endangered Species Act,” McDonald adds, explaining that the purpose of the ESA is to stop the decline of a species and prevent it from going extinct, and then to bring it back to a recovered state.

CANDID CAMERA Carnivore specialist Tyler Parks mounts a trail camera hoping to catch lynx in action.

FROM LEFT: KALON BAUGHAN; ALLEN MORRIS JONES



OUTER LIMITS Most lynx live north of the Canadian border, but breeding populations exist in Maine, Minnesota, Montana, Washington, and Idaho. Since 1999, lynx have also inhabited southwestern Colorado after that state released more than 200 into the San Juan Mountains over a seven-year period. MAP SOURCE: USFWS

"In this case the threats have been addressed, and lynx are at a recovered state," he says. "But delisting is now at a minimum of 20 years out. Our concern is that this reduces incentives for landowners, timber interests, and others to work to protect lynx habitat, and it gives ammunition to those trying to gut the ESA entirely."

In November 2024, the USFWS released its final Canada lynx recovery plan. The main threat, according to the document, is the ongoing loss of habitat in the western United States as well as warming winters that make it harder for lynx to hunt snowshoe hares. In addition to adopting a recovery plan, the USFWS proposed revisions to "critical habitat"—areas where land and wildlife managers must take special measures to reduce activities that could jeopardize lynx recovery, such as logging projects or trapping where they might be inadvertently caught. It proposed 20 new critical habitat designations that add territory in Colorado where lynx were reintroduced, while removing areas in the Greater Yellowstone Ecosystem where federal biologists have determined habitat conditions aren't suitable for a resilient breeding population.

HUMANS AND LYNX

Meanwhile, field work continues. A recent camera study spanning Glacier National Park took a fresh approach to lynx research by using patterns in the fur of the inside front legs to identify individual cats. For this survey, led by Washington State University graduate student Alissa K. Anderson, 300 motion-sensitive cameras were placed at 1-kilometer intervals across the park. Researchers counted roughly 50 lynx between 2018 and 2021—more than they expected to find. The work helped highlight Glacier as a potential climate refuge for lynx and suggests that populations may be larger than current estimates.

John Squires, with the U.S. Forest Service's Rocky Mountain Research Station in Missoula, is one of the country's foremost experts on Canada lynx. (Jay Kolbe did his research in the late 1990s and early 2000s under Squires's oversight.) For almost 30 years, Squires has helped conduct a considerable percentage of the major research projects on Canada lynx across the continent, and since the early 2000s, he's collared and gathered data on more than 260 individual lynx. Along with colleagues and co-authors, he's published pieces on predicting travel corridors, on den selection criteria, and on a recent study looking at how wildlife and forest management practices affect lynx.

Most recently, Squires has been surprised to find that lynx hunt in not just old growth or old burns, but also a mix of thinned forest and old clearcuts.

"That wasn't obvious to us before," he says. Squires is interested in how forest restoration projects might help enhance habitat, and how lynx will deal with larger, more intense forest fires along with slim snowpacks and record heat.

Just down the road from Squires's office in Missoula, Kluge and Parks are still busy gathering data. "So far we've had lynx detections in all the expected areas but also some spots we were not expecting them," Kluge says, adding that lynx numbers tend to rise and fall in a roughly 10-year cycle that tracks the highs and lows of snowshoe hare populations. "That, along with their elusive nature, makes it especially challenging to estimate the population and know where it sits in that cycle. I think lynx are moving toward a cyclical high, but it will be interesting to compare our data with surveys four years from now when the population could be trending toward a cyclical low."

Much of the policy regarding lynx and lynx habitat has been guided by litigation and bureaucratic maneuvering. But thanks to Squires, Kolbe, Anderson, Kluge, and other scientists like them, there's a solid chance that, moving forward, data will help drive management.

"Since lynx populations ebb and flow following the natural cycles of snowshoe hares, you'll see more lynx in more places during the highs and fewer during the lows," says McDonald. "That is a key consideration in our monitoring and management, with the ultimate goal of ensuring we have adequate habitat to sustain lynx across the highs *and* the lows."

See a video of FWP research biologists setting camera traps for lynx in the Bitterroot Mountains at youtu.be/07EXTlucxIY

KALON BAUGHAN

HOME RUN For one week a year, the author and his buddies drop anchor to camp and fish on a cherished section of the Missouri River.

Welcome to Catfish Camp

An annual week of finding solitude and catching warmwater fish along the middle Missouri River.

Story and photos by David Schmetterling

I love the mountains of western Montana where I live, but I also carry a deep fondness and appreciation for the prairie and everything that calls it home. Pronghorn are my favorite animal to hunt, in part because I get to travel to where they live. It's an opportunity to spend time crawling around in the sage, prickly pear, and big bluestem—things I wouldn't otherwise do.

The same goes for channel catfish. I love where they live in the same way I love the gin-clear water and colorful stones in the streams where I find westslope cutthroats.

There's a special beauty and quietude on the big muddy rivers where I've learned to catch catfish and all sorts of other species you won't find in mountain streams.

WORK MEETS PLAY

For the past 20 years, my coworkers Rob and Tracy and I have looked forward to setting up camp along the Missouri River to go fishing. We call it catfish camp. We're all fish biologists for Montana Fish, Wildlife & Parks, and for more than 20 years we have spent long days in the field together netting and electrofishing to monitor populations, year-class strength, recruitment, and other factors that go into managing fisheries across much of the state. Those efforts involve a variety of gear and many different bodies of water.

Though that's what we do for work, years ago we began using our time off to spend a week trying to catch fish for fun, and with considerably less-effective gear than we use in our day jobs.

Each May we camp on the prairie at various spots along the Missouri River between the mouths of the Marias and Musselshell rivers. We primarily fish setlines for channel catfish. A setline consists of a heavy mainline (about 30 to 50 feet long), which we anchor to the river bank with rebar we pound into the earth, and droppers—30-inch pieces of coated stainless steel line that clip to the mainline and have a swivel on the other end for attaching a large circle hook.

According to FWP's fishing regulations for the Eastern District, each angler can have up to six lines, and each line can have up to six hooks. We usually fish about four each, and most lines have four to six hooks. That's about 60 baited hooks in the water at one time, and often we don't catch much of anything, which shows just how hard this fishing can be.

FISHING WITH THE *FATMUCKET*

We typically fish together around the same week each year, which works well with our work schedules and initially coincided with paddlefishing, another eastern Montana fishing activity we all enjoy. We set our lines in the usual spots: "Catfish Coulee," "Cow Trail," "Pelican Point," "Drum Hole," even "Hawaii." You won't find those names on the map, but we could navigate to them blindfolded.

Our boat, named the *Fatmucket* for the native and most common freshwater mussel on the river, is a humble $400 beater that we found used, not wanting to spend any more on something we only use one week per year.

The *Fatmucket* is spartan and industrial—a true work boat. Yet we've customized it to meet our needs, stripping it down to a bare-bones setlining boat. It's not comfortable, reliable, or attractive, but it usually works for our needs. The center console, diamond plate decking, and permanently mounted hook and dropper box make us feel right at home (or at work, because this is the style of most FWP fisheries craft). Though we'd love for it to have a jet-drive outboard motor, all we can afford is a basic propeller model, so I welded up a metal shield called a "merganser foot" that protects the prop and skeg from the gravel and logs we inevitably run into in the turbid and often-shallow water.

Even though this looks and feels like work, it's not work—and that's the fun.

Though at times what we do on the *Fatmucket* may look like fisheries work—checking and pulling lines, maneuvering the boat, recording data—it's not work. And that's what makes it so much fun. Fishing setlines is part of the allure. There is something so simple and passive about it; you just toss out the lines, then wait. This is meat hunting. It is not about a hooked fish making a long run, stripping out line, or leaping into the air. It's about putting fillets in the freezer. I love to cook, and this is a means to an end. We keep most of what we catch.

That's not to say this fishing lacks excitement. The anticipation of checking the lines is like opening a birthday present: You don't know what's in there. Even though our typical catch is just one or two channel catfish per line (a triple is rare for us), with dozens of species in the Missouri (compared to just three in a typical mountain stream), we're often surprised. It's usually a catfish, which is just fine. But depending on temperature, flow, and turbidity, we might also catch a shovelnose sturgeon, sauger, burbot, walleye, or even goldeye on the setlines. Turns out that most fish species enjoy eating big pieces of bait sitting on the bottom of the river.

We bait the big circle hooks with either fresh-caught goldeye pieces or chunks of cured sucker. Tracy cures the sucker meat using a secret recipe unknown to even Rob and me. He hasn't shared his method with us, and we don't ask. One year when Tracy couldn't make the trip due to other commitments, he made sure to provide us with the brined sucker meat for bait.

Even with this mystery bait working for us, we're still not all that effective and seldom approach the legal limit.

Our fishing is simple and basic in an age when technology is creeping into (and some argue taking over) everything so many of us do to have fun outdoors. At catfish camp, high-tech gadgets aren't necessary. We bring no electronic sonar fish finders, pricey fluorocarbon fishing lines, expensive graphite rods, or boxes of specialized lures in various colors, weights, and sizes. This is Huck Finn angling. After baiting our setlines, we walk along the bank, casting worms to hook the occasional goldeye (I keep a dozen to smoke), channel catfish, and freshwater drum (our favorite). If conditions are right, we also catch burbot, sauger, walleye, shovelnose sturgeon, flathead chub, shorthead redhorse, stonecat, smallmouth buffalo, common carp, and smallmouth bass. It's an amazing mix for one stretch of river.

For the past 10 years or so, we've settled on a spot where the fishing is good, but maybe more importantly, the angling pressure is light. We seldom see anyone else, which is really what we're after. We expect thunderstorms, hail, and baking sun, and we sometimes get all of them in one day. We go early in the year when the weather is especially unpredictable, but it's also before peak mosquito season and when few other anglers are around. It's a nice balance.

The fishing, the weather, and the conditions might be better other times of the year, but the three of us are just fine with catfish camp the way it is. The company is great, and we've got it on the calendar again next year.

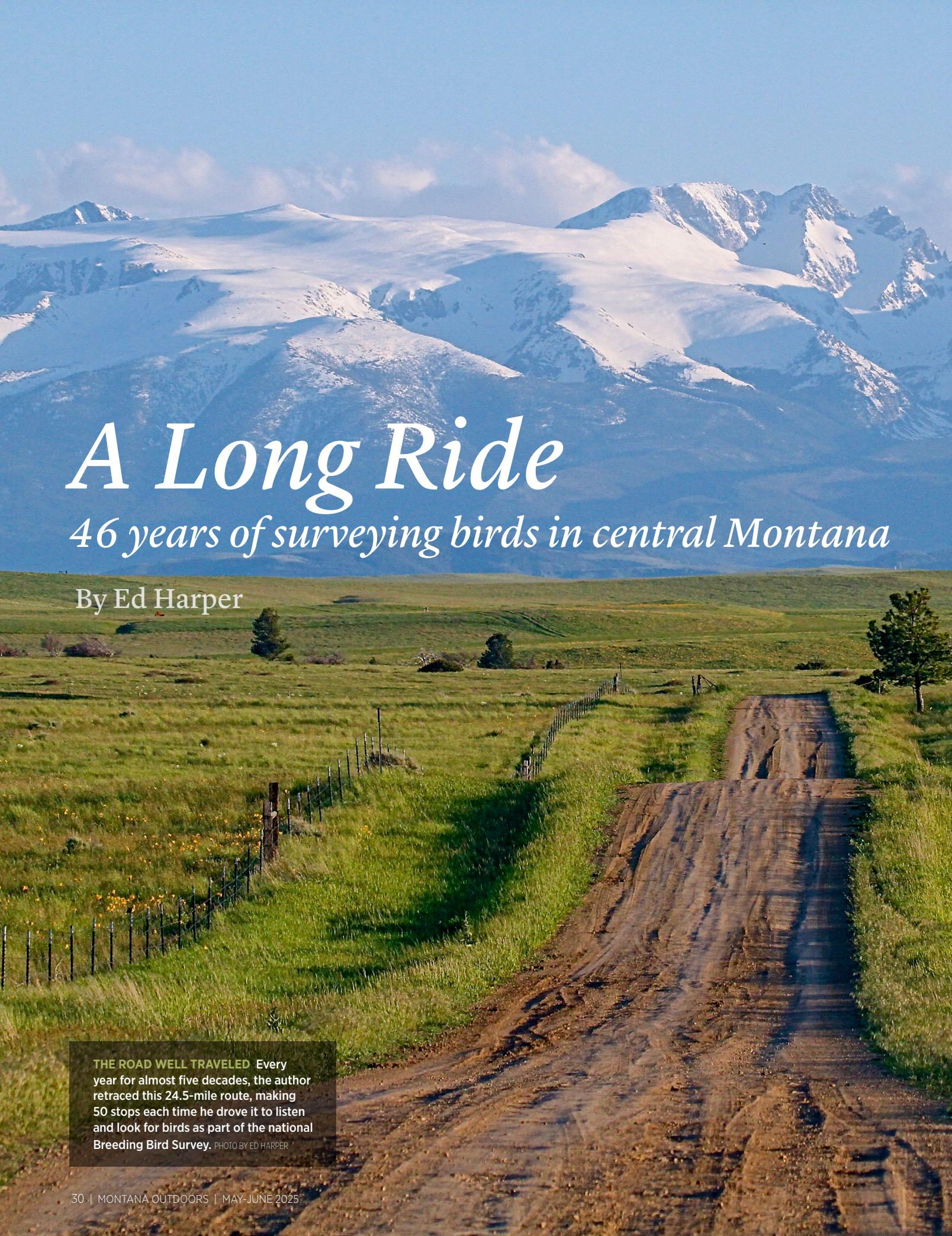
David Schmetterling is an FWP fisheries biologist in Missoula.

RIVER DELIGHTS Clockwise from above: A big haul of catfish from the Missouri; the custom-welded "merganser foot" to protect prop and skeg from gravel and logs; the author with his catch; Tracy Elam with a portly catfish; captaining the boat to the next setline; a goldeye headed for the smoker; bait box of cured sucker; how fish biologists relax—camping and fishing; the *Fatmucket*

A Long Ride

46 years of surveying birds in central Montana

By Ed Harper



THE ROAD WELL TRAVELED Every year for almost five decades, the author retraced this 24.5-mile route, making 50 stops each time he drove it to listen and look for birds as part of the national Breeding Bird Survey. PHOTO BY ED HARPER

It was 5:40 in the morning, and my eyes strained to find shapes in the awakening light as I listened closely to a chorus of birdsong.

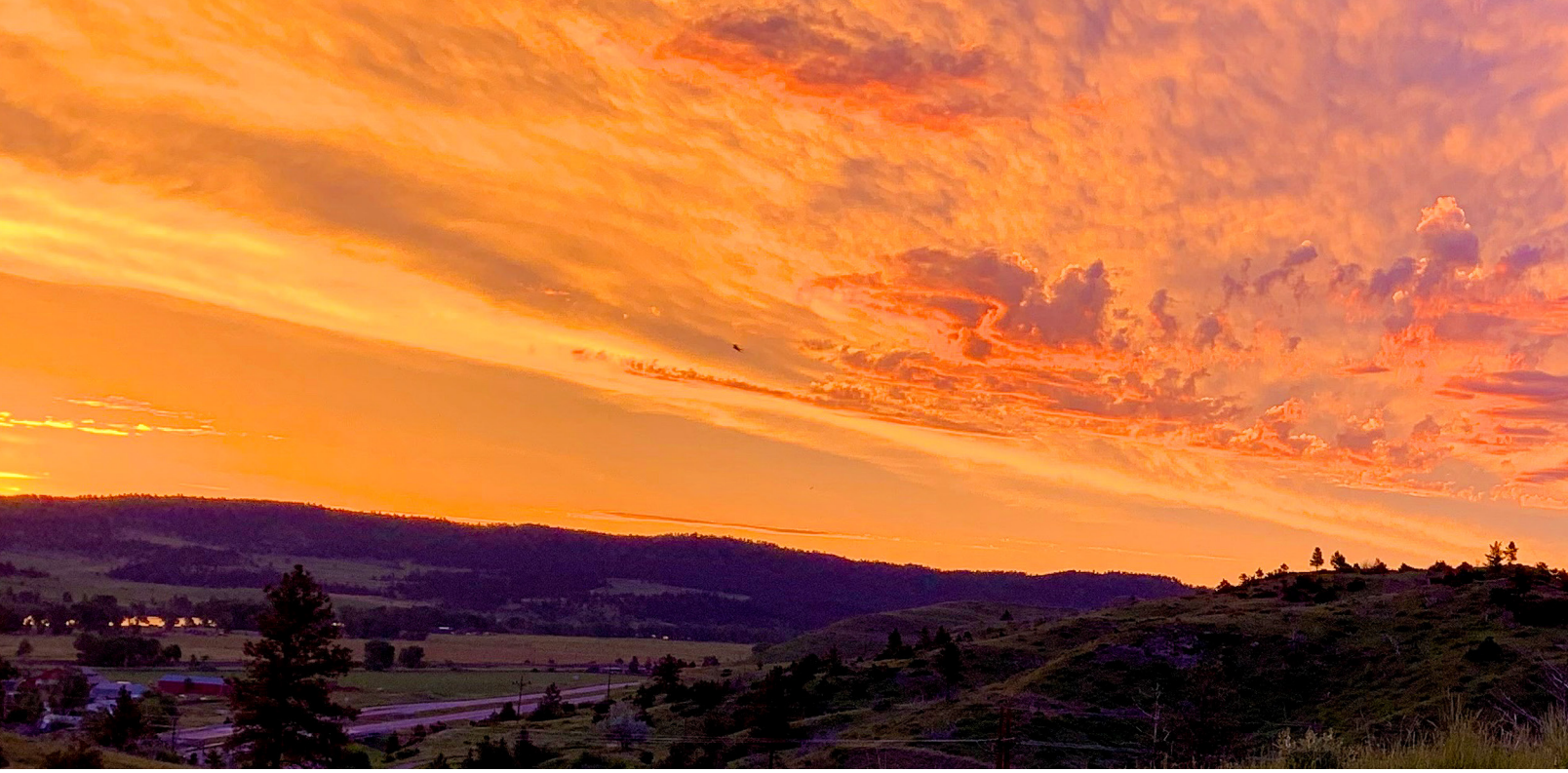
Soon my attention shifted to the rumble of a truck creeping down the gravel road and clattering over a cattle guard. An old green Dodge pickup pulled up behind my parked Subaru just as my timer dinged, letting me know three minutes had elapsed.

A man with a weathered face and a worn Stetson leaned out and in a voice that was a mixture of curiosity and suspicion asked if there was a problem. I quickly responded that I was doing a breeding bird survey. Perhaps my pencil and pad, orange safety vest, and binoculars hanging across my chest had eased his suspicion but not his curiosity.

"Who are you working for?" he asked.

I smiled and told him I was a volunteer, part of a concerted effort nationwide to assess the health and status of breeding birds in the U.S. and Canada. I added that I had parked at this very spot every year since 1977, one of 50 stops on my route. I would start north of Reed Point at 4:58, a half hour before sunrise, and try to be finished by 10 a.m. Perhaps sensing the urgency in my voice, he responded, "Well, I better get going, but I hope you find what you're looking for. For what it's worth, I've been seeing fewer birds than in past years."

Such encounters are not uncommon, particularly on remote and lightly traveled roads. It's also not surprising that locals might wonder what's going on, particularly this early in the morning. Although many Breeding Bird Survey (BBS) routes have existed for more than half a century, many people are unaware how unique and widespread they are. ▶▶



A CONTINENTAL NETWORK

The late Chandler S. Robbins, a U.S. Fish & Wildlife Service scientist, birder, and author who died in 2017 at age 98, envisioned a continental-scale program to monitor bird populations for harm from pesticides, habitat loss, and other human activities. He suggested creating a network of highly skilled volunteers across the country to run annual bird surveys.

This idea evolved into a nationwide web of 24.5-mile routes spread across diverse habitats, away from high traffic and noise. Each year, volunteers monitor the exact same routes, stopping every half mile (50 times), to record all birds seen or heard within a quarter-mile radius.

The census time at each stop is three minutes sharp, with the census-taker noting birds as well as weather, noise, and other factors in the report. Volunteers must start their routes one-half hour before sunrise and finish within five hours. Information from across the continent is then compiled and evaluated by the U.S. Geological Survey.

BBS began with 600 routes in 1966 and has since grown to more than 3,000. Montana's 107 routes are coordinated by Beth Madden, a retired wildlife biologist with the U.S. Fish & Wildlife Service who lives in Bozeman.

BONDED FROM BOYHOOD

My interest in birds started when I was a young boy growing up on the banks of the Yellowstone River south of Livingston. In addition to the wonderful fishing, the bird life there captivated me. I can still remember when I first heard a distinctive call and, wanting to know its source, tracked down the bird. It was a strikingly gorgeous red-shafted flicker. I was mesmerized by its beauty and distinctive vocalizations.

Long-billed curlew

Though my binoculars back then were barely functional, I began an inquiring journey to discover the amazing world of birds. I knew of no one else who shared my passion until I headed to Montana State University in Bozeman for college. The late Dr. Clifford Davis became one of my mentors. Walking with him before class and having him name bird after bird simply by hearing their songs and calls was an exhilarating experience. I started working diligently to learn bird vocalizations. The late Dr. P. D. Skaar was another great mentor to me. We became close friends and I accompanied Skaar on many outings, always with an ear to learn more. As my skills grew, Davis asked me if I would like to take on the newly created Reed Point BBS route in 1977.

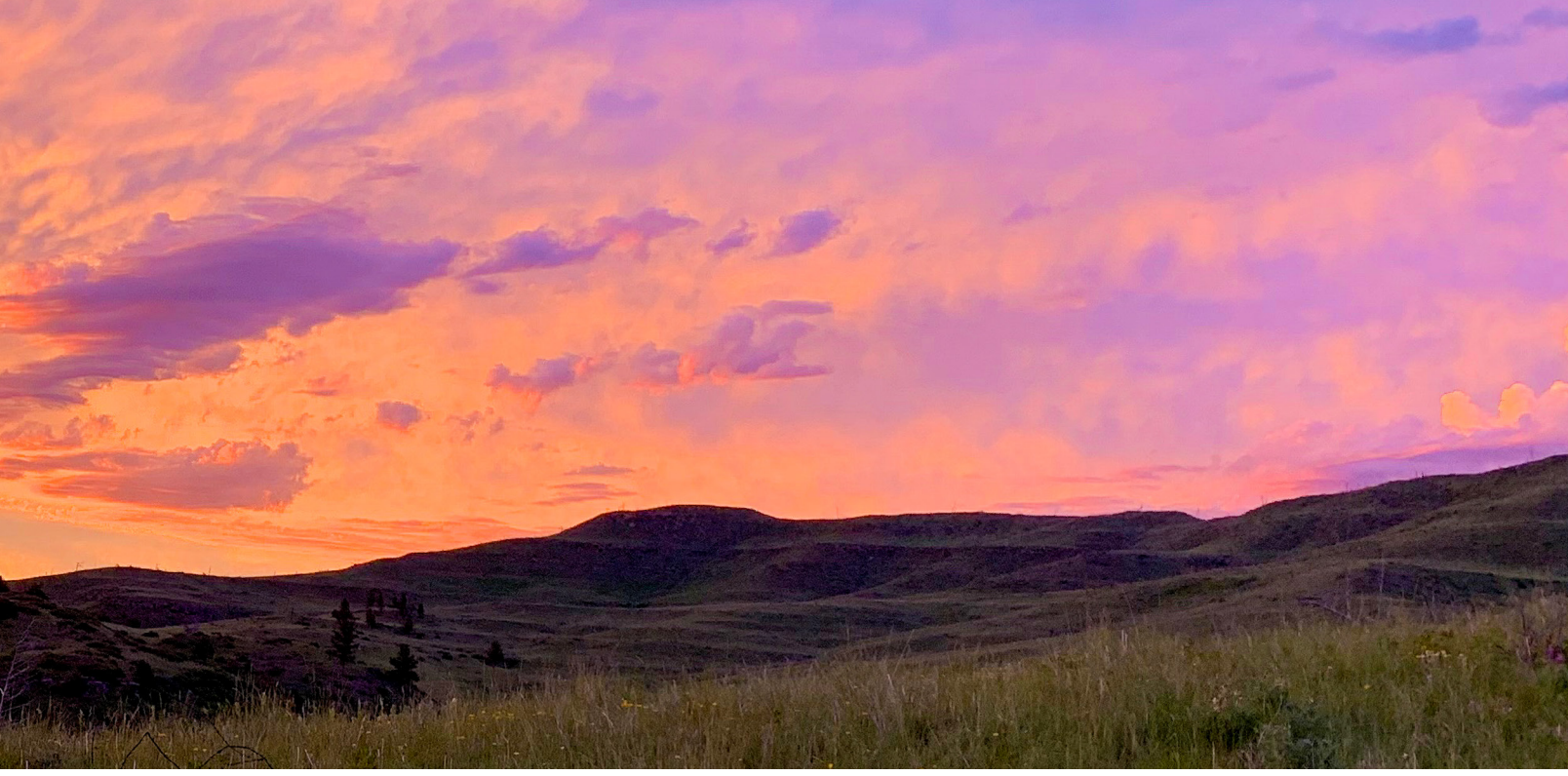
And now, 46 years later, I am retiring from the route. It has been a love affair, but as we age, so do our ears. And excellent hearing is essential. Mine used to be but now when I bird with those in their teens and twenties, I realize I am not hearing all the western wood-pewees and Sprague's pipits. That tells me it's time to hand off the joy of the Reed Point survey to another bird lover.

Over the years I have maintained other BBS routes for a duration, but the one I always held onto was Reed Point. Situated halfway between Livingston and Billings in one of my favorite parts of Montana, the route crosses the Yellowstone River, then proceeds south through the quaint town of Reed Point and under Interstate 90 before climbing a steep hill to a grassy prairie. There, just as the sun is rising, I am often greeted by an upland sandpiper.

Whether singing or standing magnificently atop a fence post, this remarkable species is always striking. It may have wintered in the Southern Hemisphere, perhaps Paraguay, and flown thousands of miles to this spot.

Songs of western meadowlarks and vesper sparrows greet me at each stop, with the Absaroka Range towering in the distance and lofty Granite Peak as a sentinel.

ED HARPER



This time of day there are few if any other vehicles. It is all mine! As the route progresses, long-billed curlews might rise into the sky, calling to announce my intrusion into their space. Meanwhile pronghorns snort in their distrust of my presence.

The route eventually drops down and parallels Country Creek all the way to the Stillwater River. The riparian habitat introduces a new set of birds and I am often hard-pressed to record the many species in the span of three minutes. A doe mule deer with twin fawns might make me want to linger and watch, but the morning allows no rest.

When the route ends, I have reached Montana Highway 78 south of Columbus and the tranquility of dawn vanishes with the din of traffic. I am completely worn out from the intense concentration at the past 50 stops, but I am content to know I have added something to citizen science while amassing great memories, some to last a lifetime.

46 YEARS OF CHANGE

Across almost half a century of surveys, you're bound to witness changes. The purpose of the BBS is to track shifts in our avifauna and, just as Rachel Carson pointed out in *Silent Spring*, there is cause for concern. Recent data show that since 1970, nearly 3 billion breeding adult birds have disappeared, including a 50 percent decline in grassland species. BBS surveys have also shown a 72 percent drop in lark buntings and 84 percent falloff in chestnut-collared longspurs since 1970.

On my Reed Point BBS I see fewer western meadowlarks and vesper sparrows. Black-billed cuckoos have disappeared. Yes, some species have increased. House finches and Eurasian collared doves are now present in higher numbers as are the recently introduced wild turkeys.

I've also noticed habitat changes and loss. Fire altered a large swath of the route, which has been slow to revegetate. I have been saddened to see large sections of prairie plowed up and converted to grain, and some wetlands filled. Ranchettes have sprung up at an increasing pace in recent years. These intrusions fragment and alter the environment in a way that is not conducive to most bird species' survival. It is true some birds may profit by being close to development. House finches and American robins do well, as do brown-headed cowbirds, which thrive on fragmentation as they sneak their eggs into nests of other birds to be hatched and reared by unsuspecting hosts. Many species, particularly ground-nesting birds, fall victim to feral and roaming house cats, which studies have found kill more than a billion birds annually in the United States.

Western meadowlark

Of course, some change is inevitable, but good stewardship and awareness can go a long way in arresting further decline of our treasured bird species.

I've had a number of surprising moments while conducting my surveys. Once, while in a remote portion of the route and far from the din of traffic, I was startled by a siren. Thinking an emergency vehicle was speeding down the road, I pulled aside and waited. Eventually I began wondering why the vehicle had not yet appeared. Fretting about the time I was wasting, I finally ventured forth, and upon rounding a bend in the road, I discovered the source of the wailing siren. A government trapper was trying to elicit a response from coyotes. Mystery solved.

The most terrifying moment in my many years prompted me to throw myself to the ground in a prone position, binoculars lodged against my chest. As I enjoyed the sounds of birdsong and the scent of wildflowers one morning, the calm was suddenly shattered by the sonic blast of an Air Force bomber practicing low-level-terrain flying. There had been no warning, the sound only reaching me as the plane streaked overhead. My heart skipped a beat and some nearby

pronghorns instantly became fading white rumps in the distance.

But through it all, it has been my honor and privilege to make a combined total of 2,300 stops listening and looking for birds for three-minute intervals while enjoying a most beautiful part of Montana and always feeling enriched by it. I hope my successors enjoy similar thrills and the satisfying sense of accomplishment as they undertake the BBS experience.

Born and raised in Montana, Ed Harper was fascinated with birds by age 6. He's now retired after 34 years of teaching mathematics and field ornithology at American River College in California. He serves on the Montana Bird Records Committee and has photographed more than 800 species of birds in the U.S. and countless more on all seven continents.

The Original Citizen Science Project

Launched in 1966, the Breeding Bird Survey (BBS) has become the primary source of long-term, large-scale population data for more than 400 species of North America's breeding birds. The USGS Eastern Ecological Science Center and the Canadian Wildlife Service jointly coordinate the program, which includes more than 4,000 survey routes across the continental U.S. and Canada. No other single resource provides as much data on the continent's bird populations—and it is fueled largely by volunteers.

Each state has a BBS coordinator like me who works to recruit qualified observers. As a retired wildlife biologist, I am continually searching Montana's birding community to match dedicated volunteers with each of Montana's 107 routes. Given that observers must be able to identify all of the birds in an area by sound as well as sight, this can be a challenging task.

Countless dedicated people have contributed to Montana BBS throughout the years. Ed Harper's commitment—46 years of service—is exceptional. Last year, 67 observers were assigned to run 98 of Montana's routes. Despite concerted efforts, a few routes remain vacant each year, especially in remote rural areas. Impressively, almost half of Montana's observers are citizen volunteers with keen birdwatching skills who donate their time and expertise to the cause. In addition, our Montana tribes, universities, and state and federal agencies pitch in by allowing employees to take on a route or two. About a dozen Montana Fish, Wildlife & Parks employees have adopted routes. Citizen conservation groups such as the American Bird Conservancy, American Prairie, and Montana Audubon also help. All are motivated by the knowledge that managing our avian populations isn't possible without knowing how various birds are faring.

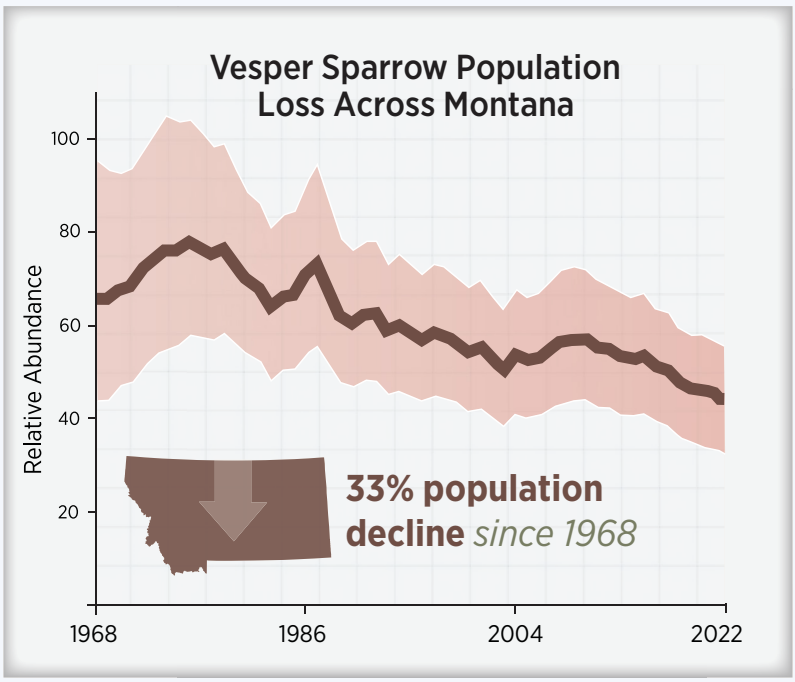
Free and publicly available, BBS data have helped reveal avian population trends and guide bird conservation and research priorities. In 2019, it underpinned a landmark paper published in *Science* sounding the alarm that we have lost 30 percent—3 billion—of North America's birds since BBS began a half century ago. These revelations sparked an advocacy movement via the website 3billionbirds.org (#BringBirdsBack). These growing concerns about our declining bird populations make the 58-year-old BBS program especially relevant.

"I am grateful to everyone who makes running their BBS route part of their annual spring traditions," says FWP's avian conservation biologist Allison Begley. "Folks like Ed Harper who have provided consistent, long-term data are critical to how Fish, Wildlife & Parks can assess the status of so many bird species. Without these citizen scientists, FWP biologists, and people using personal time, we would not have this most remarkable data set."

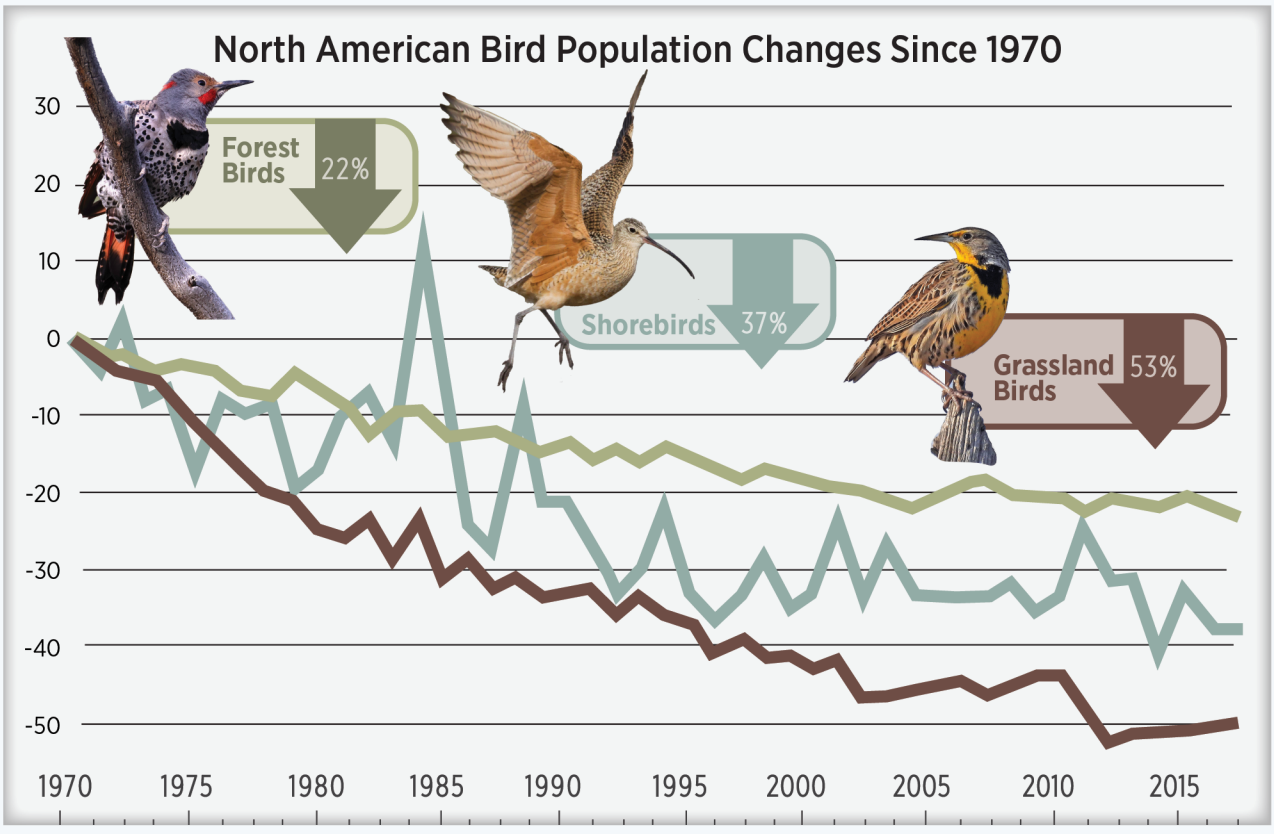
—Beth Madden

For more information or to explore options for volunteering with BBS, visit www.pwrc.usgs.gov/BBS/.

MONTANA ROUTES **These white dots show each of Montana's 107 BBS routes, with Ed's Reed Point route circled.** SOURCE: USGS



CRASHING COUNTS Data from BBS surveys indicate Montana's vesper sparrows have fallen by a third since 1968, a decline biologists say likely stems from loss of grasslands, increases in mowing and haying, and earlier crop harvests. Many other grassland birds are also ailing, such as the chestnut-collared longspur, lark bunting, bobolink, and Sprague's pipit.



NORTH AMERICAN BIRD POPULATION DECLINES SINCE 1970 This graph reflects counts from 392 bird species designated as "greatest concern" by one or more U.S. states. Data from *State of the Birds 2019*. www.stateofthebirds.org/2019/steep-declines/

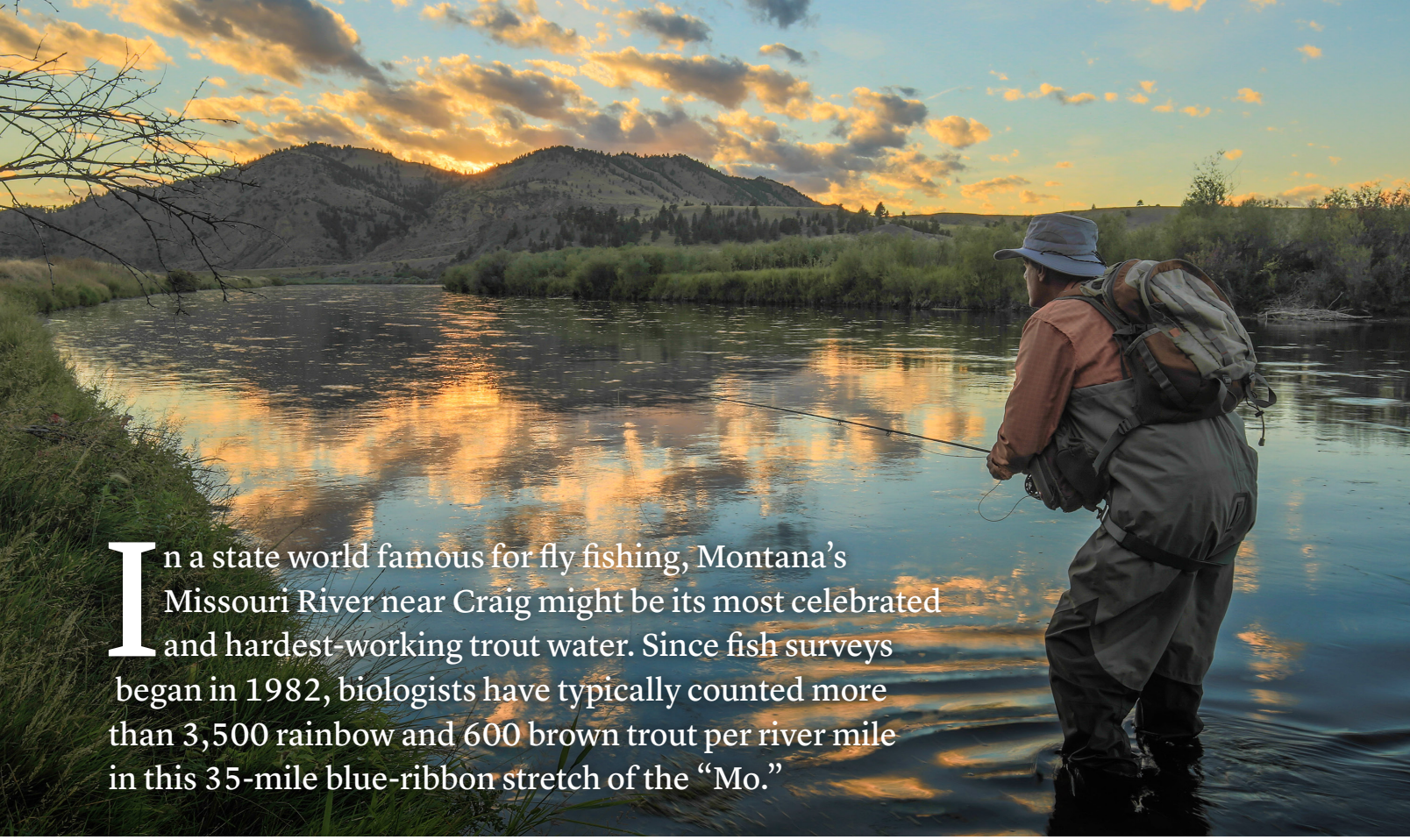
CLOCKWISE: ED HARPER; SHARON DEWART HANSEN; KEN ARCHER; BECCA WOOD

NOT LIKE IT WAS

The Missouri River's blue-ribbon trout fishery is **changing**. Is that **good** news or **bad?**

By Tom Kuglin

HALLOWED WATERS The sublime stretch of the Missouri River near Craig draws trout anglers from across the world. PHOTO BY JOHN LAMBING



In a state world famous for fly fishing, Montana's Missouri River near Craig might be its most celebrated and hardest-working trout water. Since fish surveys began in 1982, biologists have typically counted more than 3,500 rainbow and 600 brown trout per river mile in this 35-mile blue-ribbon stretch of the "Mo."

In 2022, Montana Fish, Wildlife & Parks biologists recorded 6,132 rainbows per mile, the third highest on record, and a whopping 1,594 browns—the most ever counted and 2.5 times the average. This deluge of trout didn't last. By 2024, counts fell back to 3,312 rainbows and 744 browns. So why the yo-yo?

"We had good reproduction after a high-flow event in 2018," says Jason Mullen, FWP regional fisheries manager in Great Falls. A hefty snowpack that year helped the Missouri run fast and deep with spring runoff, exposing gravel bars that trout need to spawn. "Those conditions helped create a big pulse of young fish, which we saw echoed in that 2022 survey."

Though fish-per-mile is back to normal, the '24 survey showed trout were almost an inch longer than the long-term average—17.4 inches versus the typical 15.9. That's a bonus to anglers already satisfied with the size of the river's trout. In 2016 (FWP's most recent angler survey), they gave the Missouri high marks on fish size, ranking it 1.3 on a 1 to 5 scale, with 1 being the best.

"They're coming for the quality of the fish, the size of the fish," says Pete Cardinal, a longtime outfitter on the Mo. "Back when I started, you might catch one 20-inch rainbow a year, and an 18-inch rainbow was a roll of film. Now it's not unheard of to catch a dozen 20-inch rainbows in a day."

Yet some dry fly aficionados grumble that fewer fish are rising to the surface. The lack of springtime flushing flows has allowed silt to build up on the river bottom, decreasing mayfly and caddis fly abundance. Late summer aquatic vegetation chokes boating lanes. And growing numbers of inner-tubers, kayakers, and anglers make the river feel crowded. "It's definitely not the same Missouri as when I started fishing here in the early 2000s," says Dave Stagliano, a stream ecologist who has sampled aquatic insects throughout the blue-ribbon stretch for the past decade.

A TALE OF TAILWATERS

It's no wonder the Missouri is such a trout factory, as it comprises some of Montana's most storied trout rivers. The Madison, the Gallatin, and the Jefferson (which takes in the Big Hole, Beaverhead, and Ruby) combine at Three Forks to form the Missouri, which flows north into Canyon Ferry, Hauser, and Holter reservoirs. These deep impoundments deliver a steady supply of cool water downstream throughout the year to support the blue-ribbon fishery. Winding through canyons and passing irrigated wheat and barley fields on its way to Great Falls, the Missouri picks up water from Little Prickly Pear Creek and other tributaries.

Below the surface, thousands of trout grow big feeding on a rich assortment of aquatic insects. Above the surface, anglers cast flies and lures into the river's seams and holes, hoping big fish will bite.

"We always tell people, if you're a serious fly angler anywhere in the world, you've either heard of the Missouri or you've fished it," says Chris Strainer, owner of CrossCurrents Fly Shop in Craig. "There's potential to catch a lot of fish, especially in spring when the nymph game is a little easier. It's also appealing because there's some big fish."

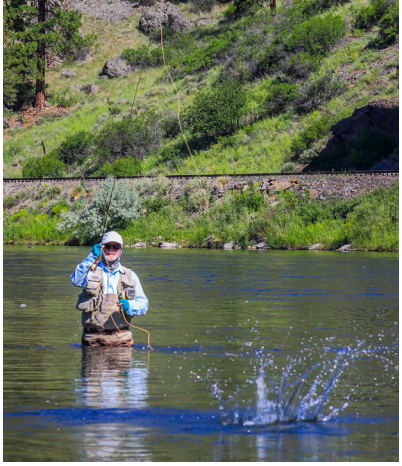
FWP biologists conduct electrofishing surveys on the Craig and Cascade sections to tally trout numbers and size. These annual assessments span more than four decades, providing biologists with extensive data to analyze trends in the fishery.

FEWER FLUSHING FLOWS

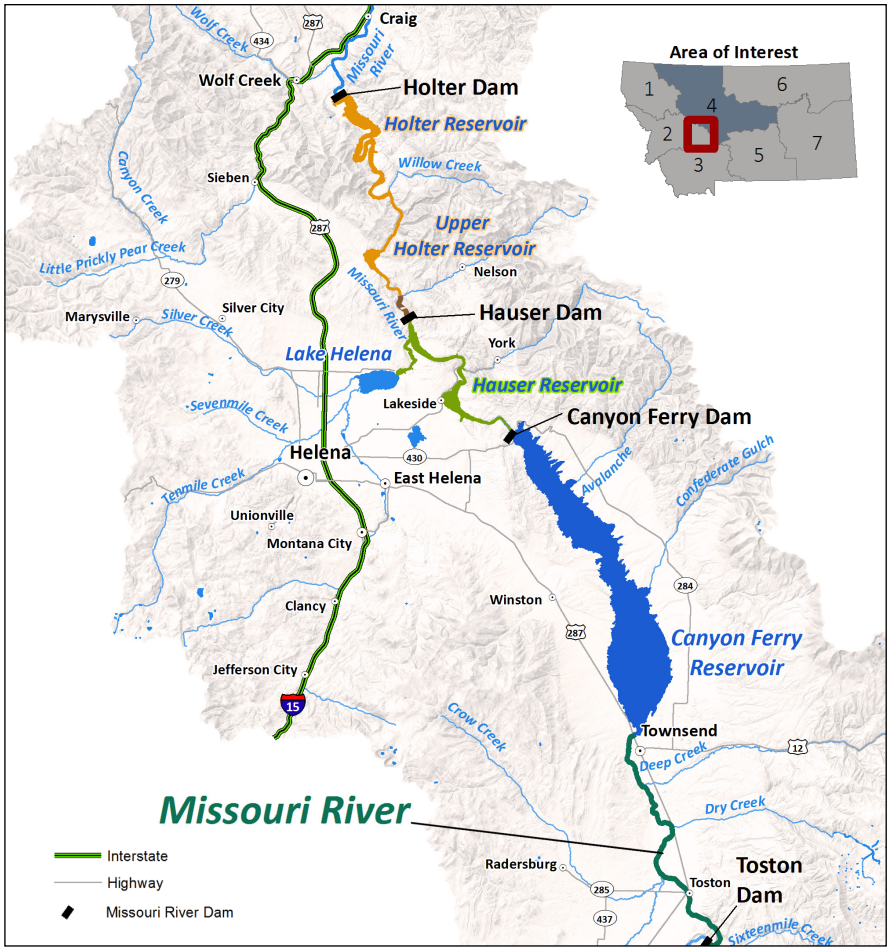
Though no one is certain why the Missouri holds bigger trout than in years past, it appears one big reason is that underwater

ARNIE GIDLOW

Tom Kuglin is hunting editor of Bugle *at the Rocky Mountain Elk Foundation.*



MO TROUT, MO TRAFFIC Both the size of trout and the number of people fishing the 35-mile blue-ribbon stretch of the Missouri River from Holter Dam to Cascade have climbed steadily over the past two decades. It now ranks as one of Montana's most popular fisheries, with 160,000 to 200,000 "angler days" per year.



TAILWATER ASSEMBLAGE The Missouri meets a series of dams as it passes Helena. SOURCE: MONTANA FWP

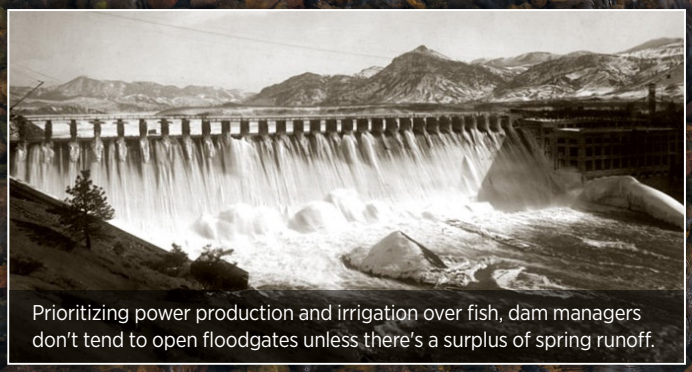
CLOCKWISE FROM TOP LEFT: ARNIE GIDLOW; ARNIE GIDLOW; JOHN LAMBING; JESS MCGLOTHLIN

Now it's not unheard of to catch a dozen 20-inch rainbows in a day."

invertebrates have shifted in a direction that benefits rainbow and brown trout. Cardinal, who holds a master's degree in fisheries and has worked as a biologist on the river, says that in the 1980s, '90s, and early 2000s, the river produced far more caddis flies and mayflies such as blue-winged olives and pale morning duns than it does today. He recalls hatches so intense they "nearly blocked out the sun."

In a healthy river, mayflies and caddis flies thrive in the bottom substrate dominated by stream gravel, where they crawl around grazing on diatoms and other algae. Historically in late spring, when mountain snowpack melted, heavy "flushing flows" greater than 15,000 cubic feet per second (cfs) came down the Missouri and washed silt from the gravel, keeping the substrate clean. By midsummer,

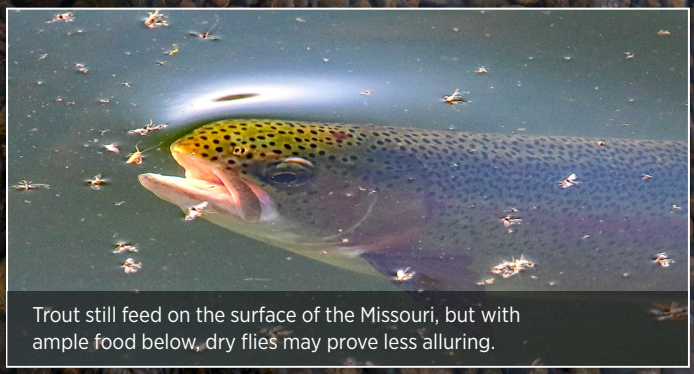
Higher Peak Flows



Prioritizing power production and irrigation over fish, dam managers don't tend to open floodgates unless there's a surplus of spring runoff.

But when high water is able to scour the river bottom, it exposes gravel that both trout and top-water insects need to reproduce.

Some dry fly anglers lament that mayflies, caddis flies, and other insects don't hatch with the same intensity they once did.



Trout still feed on the surface of the Missouri, but with ample food below, dry flies may prove less alluring.

AT THE OARS One in five anglers on the Missouri River use a guide, jumping up to one in three during the summer.

the river is typically maintained at the recommended minimum flow of 4,100 cfs. During good water years it may be a little higher, while poor water years may be a little lower.

But over the past several decades, winter snowpack has decreased due to warming winters. The result has been fewer flushing flows on the Missouri and its tributaries. This has allowed silt to accumulate on the river bottom, burying gravel in sediment.

> "In the Craig stretch, we find 20,000 bugs per square meter along the bottom."

Yet as caddis fly and mayfly numbers have declined, silt-loving creatures have thrived. Stagliano says the river now is packed with scuds, sow bugs, snails, worms, and other aquatic invertebrates that are fattening the river's browns and rainbows. "In the Craig stretch, we'll find 20,000 bugs per square meter along the bottom," he says.

The lack of flushing flows has definitely changed the river. But whether it is for the better or the worse depends on your point of view. On one hand, trout are larger. Most anglers are happy, and the guiding business is booming. On the other, the decline in mayflies and caddis flies means there are fewer hatches bringing those big trout to the surface, where they can be caught by dry fly anglers. Most fishing on the Missouri now consists of a rower at the oars and an angler at either end of the boat, each drifting two nymphs deep below a small bobber known as a strike indicator.

Increased silt has also allowed more aquatic vegetation to take root in the river, which can clog boating lanes and make it harder to land a hooked trout.

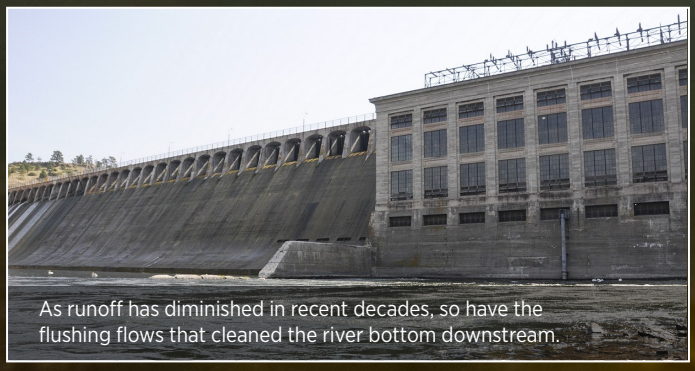
Cardinal also worries that other fish species such as mountain whitefish are struggling.

"You don't think anything is wrong with the river because the trout population is in such good shape," he says. "But you wonder where all the other fish species went to, where all the aquatic insects are, and you go, 'Well, things aren't quite right here.'"

Mullen agrees that the Missouri is shifting in character and the loss of sensitive insect species such as certain mayflies can be a warning sign of water degradation. But he emphasizes that none of this is unusual for dam-controlled rivers. "It's what you expect to find in a tailwater where you have low diversity and high density of bugs with those stable flows, compared to a freestone river where you'd expect to see more diversity of mayflies, stoneflies, and caddis flies.

CLOCKWISE FROM TOP LEFT: WIKIMEDIA; JESS MCGLOTHLIN; ARNIE GIDLOW; LEA FRYE; MARK RAISLER

Lower Peak Flows



As runoff has diminished in recent decades, so have the flushing flows that cleaned the river bottom downstream.

The resulting silt on the river floor has favored scuds and sow bugs as well as increased aquatic vegetation in late summer.

Scud-imitating nymphs are now the standard fly that anglers use on this stretch of the Missouri for much of the year.

With a banquet of deep-water bugs to feast on, trout are large, numerous, and apt to hit nymphs below strike indicators.

ANGLERS GENERALLY HAPPY

While some dry fly purists may grouse about the changes, it's not as if the river has stopped producing flying bugs. The early summer pale morning dun hatch remains epic, the trico hatch still creates tornadoes of insects along the banks in midsummer, and blue-winged olive, various caddis species, and grasshopper action continues to produce topwater hookups.

Meanwhile, anglers fishing nymphs below the surface find some of the best trout fishing in North America. The Missouri now ranks as one of Montana's most popular fisheries, with 160,000 to 200,000 "angler days" per year (defined as one angler fishing one body of water for any amount of time on one day). Numbers have climbed steadily over the past two decades.

The healthy trout population supports a burgeoning tourism industry, with six fly shops along the blue-ribbon stretch from Holter Dam to Cascade. Craig has long been the main hub of the Missouri, with three fly shops, a bar, a restaurant, and a tap house surrounded by rental cabins and residences. Estimates of annual fishing-related economic activity on the Missouri top $60 million.

Yet some wonder if the river is too popular for its own good. "Over the years it has slowly gotten busier," Cardinal says. "When [the 1992 movie] *A River Runs Through It* came, there was a big bump. Then the internet came and that was the clincher; it has just exploded. Once people find out where the fishing is good, the pressure is bound to increase."

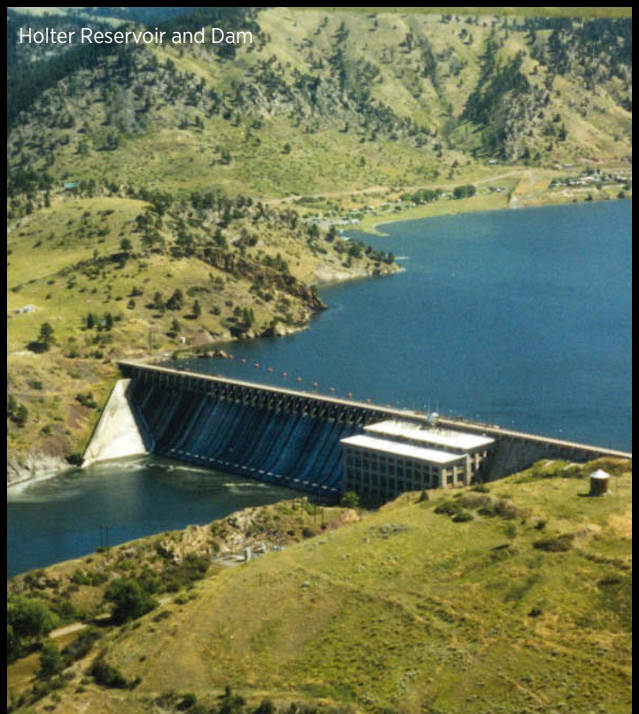
Strainer notes that the COVID-19 pandemic and increasing heat-related, late-summer fishing restrictions on other rivers also increased the Missouri's popularity because it remains open due to cool water coming from Holter Reservoir. Numbers of inner-tubers, stand-up paddleboarders, and kayakers have grown as well, and river etiquette can sometimes be an issue. FWP hears complaints about crowding, Mullen says, as well as concerns that more and more

NET GAINS Once rare, trout over 18 inches are now a common catch in the Missouri.

CLOCKWISE FROM TOP LEFT: NORTHWESTERN ENERGY; JEREMIE HOLLMAN; LEA FRYE; LEA FRYE; JEREMIE HOLLMAN

Canyon Ferry Reservoir and Dam

Hauser Reservoir and Dam



Holter Reservoir and Dam

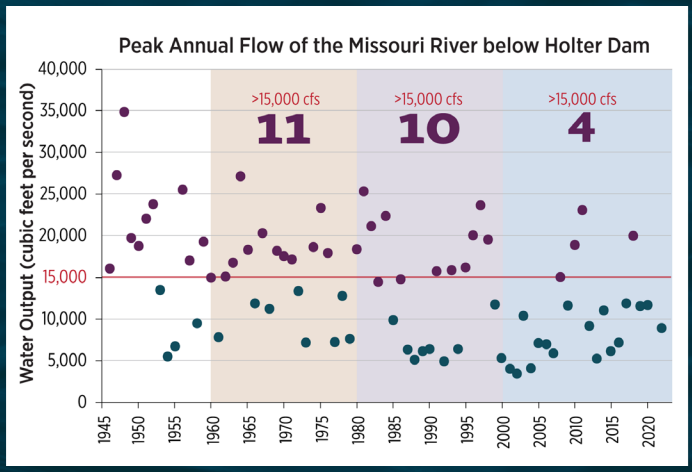
Help Wanted: Flushing Flows

The U.S. Bureau of Reclamation (BOR) operates Canyon Ferry Dam for hydropower, flood control, and water irrigation. Discharge into Hauser and then Holter reservoirs downstream depends on inflows and whether BOR can fill and maintain the reservoirs. In lean water years, dam operators hold back water in the upstream reservoirs to meet summer irrigation and hydropower needs.

Studies have shown that 15,000 cfs is needed to sufficiently clean out sediment below Holter. When the Missouri hits those flows for days or weeks at a time, both bugs and trout respond with bumper crops. Montana Fish, Wildlife & Parks regional fisheries manager Jason Mullen recalls how in 2018, river flows of 20,000 cfs were followed by a strong hatch of baby trout both in the Missouri mainstem and its spawning tributaries, which then grew into the record numbers of trout seen from 2021 to 2023.

The Missouri has hit 15,000 cfs just four times since 2000. Compare that to the 10 flushing flows between 1980 and 2000 or the 11 between 1960 and 1980.

Mullen understands why river advocates push for more flushing flows, but he notes that there's more at play. "It's not to say high flows aren't important—they are—but it appears that even infrequent high flows can carry the fish population," he says. "Since we've started monitoring, we've seen three distinct periods with increased trout densities following good water years. Knowing that, we're in constant communication with the BOR on how those flows will be managed. Our goal is to maintain sufficient flows when fish are spawning until their eggs emerge out of the gravel. It's a balancing act, because we also want to make sure enough water is kept in the reservoirs so that flows stay above the minimum recommendation level of 4,100 cfs."



This graph shows the natural ups and downs of peak flow on the Missouri and the steady downward trend over the past 80 years.

FROM TOP: WIKIMEDIA; NORTHWESTERN ENERGY; NORTHWESTERN ENERGY

THREE'S COMPANY A 2016 survey found that anglers thought the Missouri was seeing "high use" but still didn't feel it was crowded.

CLOCKWISE: JESS MCGLOTHLIN; ARNIE GIDLOW; JESS MCGLOTHLIN

of the boats are commercial operations run by outfitters. He adds that some trout are likely caught two to six times or more per year, which can increase the odds that fish will die of stress or disease.

Another problem with all the watercraft activity is that it could discourage trout from rising to feed on surface insects. "It makes sense," Stagliano says. "Why come to the top where there's all that commotion up there and you can just stay deep and get all the food you need?"

Mullen says that boat traffic has definitely increased. "But if we were to implement angling restrictions, we're potentially just displacing anglers to other waters."

To what extent is crowding a major concern? An FWP 2016 survey (the most recent available) showed that while most anglers believed the river was seeing "high use," most did not consider it crowded. The survey also showed that only one in five anglers used a guide, which increased to one in three during the summer peak season. "There's definitely a perception that there's more guiding activity than there actually is," Mullen says, while noting that the survey is nearly a decade old.

> **"If somebody asks me how much pressure the river can withstand before we start to see impacts to the fishery, right now my answer is that we don't know. This study will help get us closer to answering this question."**

Mullen is hopeful a new study with Montana State University may help reveal the extent to which too much angling pressure begins to harm fish populations on rivers like the Missouri. Though almost all fish caught in the Missouri are let go, catch-and-release mortality increases in warmer water. Mortality is generally low with cooler temperatures, as is typically characteristic of the Missouri, but angling pressure is substantial. The new MSU study is looking at fish age, growth, and size to estimate mortality.

"If somebody asks me how much pressure the river can withstand before we start to see impacts to the fishery, right now my answer is that we don't know," Mullen says. "This study will help get us closer to answering this question."

A DRY FLY CHALLENGE

The Missouri River was uncrowded and its trout more apt to take a dry fly when Helena angler Jerry Wilkerson first began fishing there in the 1980s. Huge mayfly hatches brought vast schools of trout to the surface, sipping insects struggling to dry their wings and fly to safety. And the fish were not as selective as they are today, allowing anglers to hook a trout even with a less-than-perfect drift or a fly that was a tad too big or too small.

For the most part, those days are gone. Dry fly anglers need perfectly drag-free drifts. And the era of casting to 40 or 50 "sippers" in a day is probably over. Yet Wilkerson remains a dedicated dry fly angler. He has watched as most anglers have switched to nymphing, but he still relishes seeking out trout at the surface. "I like a challenge," he says.

Strainer, the owner of CrossCurrents, says the Missouri is the ultimate test of dry fly fishing skill. "You've got to really know your bugs and your [insect life] stages. And of course your cast and drift must be much more precise and on point."

Cardinal jokes that while he has seen some friends stop fishing the river because it has become too crowded or too difficult, he asks himself rhetorically at the age of 69 where else he might go.

"I love the fish, I love the river," he says. "It's not what it was, but I try to make the best of what's there."

We made it

By Tom Dickson

Earlier this spring, I heard my first red-winged blackbird of 2025 at the tiny pond outside the FWP office where I used to work.

I say "used to" because that was the day I retired after spending 23 years as editor of *Montana Outdoors*. To fill my shoes, FWP hired Paul Queneau of Missoula, who served for two decades as an editor at *Bugle*, the magazine of the Rocky Mountain Elk Foundation. Let me assure you: *Montana Outdoors* is in good hands.

Paul asked if I wanted to continue writing this Sketchbook column and the Recipe page for the foreseeable future, so it looks like my musings will continue to appear in the magazine for a while longer.

As for that blackbird: Every year on the first or second week of March, a redwing shows up on a power line near the pond and announces its arrival with a loud, raspy *o-ka-leeee!* Though not the prettiest bird call, it always cheers me up because I consider it the official end of winter.

I know that a few more weeks of snow and cold could be in store, so I don't stow my mittens just yet. But I figure that birds must know something we don't, having lived on this continent for millions of years. If they think it's time to start migrating north and building nests, who are we not to celebrate their arrival?

That first blackbird call also means we all made it through yet another winter. Is it just me, or is February actually the *longest* month of the year, not the shortest? By March we've slogged through interminable cold, snow, and darkness. Puffer coats and remote car starters make things a bit easier, but still that long and dreary season beats us down. Many of us get depressed from lack of sunlight, our faces turn pale, skin dries and flakes, hair frizzes with static.

Some days I feel the way the grit-filled, ice-encrusted floormats in my car look.

But we persevere. Because what choice do we have? We plod along, finally get to early May, and look around as if awakening from a coma, marveling at how the world around us has changed in such a short time. We get 16-plus hours of sunlight a day, the trees are leafing out, and, in distant fields, coyote pups and red fox kits are poking their heads out from their dens. Nesting Canada geese on river islands honk as fishing boats drift past, while rainbow trout chase each other on spawning redds. Sandhill cranes hop and prance in wet meadows.

We did it. We survived. It's spring.

Some say that enduring northern winters strengthens character. For those of us living above the 45th parallel, I guess it's encouraging to think that some good comes from surviving below-zero temperatures and endless days of darkness. That we are somehow made better for it.

Yet Mahatma Gandhi, Nelson Mandela, Mother Teresa, and Malala Yousafzai—people of principle, honesty, and emotional strength—all lived in warm climates. They didn't develop their strong moral values sitting on a frozen football bleacher in November.

What I do know is that suffering through winter builds something maybe as important as character: appreciation. Those first days floating a river, hiking through fields of emerging wildflowers, or firing up the outboard are all made better by the long wait. It's like your first hot shower after a week-long backpacking trip. You can't fully enjoy something unless you've been without it for a while. And by spring, we Montanans have been without for long enough.

O-ka-leeee!

ILLUSTRATION BY STAN FELLOWS

Tom Dickson was the editor of Montana Outdoors *from 2002 to February 2025.*

Rocky Mountain wood tick

Dermacentor andersoni

By Laura Roady

No longer do I squeal, "Get it off!" when I find a tick crawling on me. I've come to terms with ticks and can flick them off myself—a milestone I never thought I'd reach. These days, as repulsive as Rocky Mountain wood ticks may seem, I find them fascinating.

actual size

ILLUSTRATION BY LIZ BRADFORD

IDENTIFICATION

Like their close relatives spiders and mites, ticks are arachnids and have eight legs and no antennae. Adult Rocky Mountain wood ticks are one of the largest of Montana's seven tick species, measuring ⅛ to ¼ inch long (and up to ½ inch long when engorged).

They're called hard ticks because they have a scutum (dorsal shield behind their head) and are shaped like a flat seed unless filled with blood. Female Rocky Mountain wood ticks have a brown body and a gray scutum that covers one-third of their back, while males have a mottled brown and gray scutum that covers their entire back.

DISTRIBUTION AND HABITAT

Rocky Mountain wood ticks are found throughout Montana except for the southeastern corner. Though many people think wood ticks are mostly in "the woods," they actually prefer tall grass and low brush at the same height as the warm-blooded hosts they aim to latch onto. While most often encountered in undeveloped areas, ticks also inhabit urban green spaces, mainly in tall grass or wooded areas with deep leaf litter.

LIFE CYCLE

Rocky Mountain wood ticks progress through four stages: egg, six-legged larva, eight-legged nymph, then adult.

This life cycle can be completed in ten weeks but typically takes two to three years. Each stage requires a blood meal from a different host to progress to the next. If a host cannot be found, larvae can survive more than 100 days without feeding, nymphs can last over 300 days, and adults over 600. An adult female needs one last blood meal to lay her eggs and then she dies.

Ticks are active in spring and early summer. If a tick at any stage cannot find a host by the time hot summer temperatures and low humidity arrive, it will seek protection under ground debris and remain dormant until the following spring.

BEHAVIOR

Ticks find hosts by "questing," which means waiting on the ends of grass or other vegetation. Questing isn't all luck—ticks sense well-traveled animal trails or resting areas and set up there. They can also detect carbon dioxide, body odor, movement, and heat emitted from potential hosts.

Upon sensing these signs, a tick crawls to the end of a blade of grass or twig and waits with its front legs extended. Once a host brushes against the tick, it latches on. Despite stories you might hear, ticks cannot fly, jump, or drop from a tree onto their host.

Adult ticks prefer large mammals like deer, people, livestock, and dogs, while larvae and nymphs prefer small mammals such as mice, gophers, squirrels, and chipmunks.

FEEDING AND BREEDING

A tick may crawl around on an animal or human for 12 to 24 hours while searching for a spot to feed where the skin is thin, warm, and dark. Once attached to a host, the tick feeds for up to one week.

A tick's saliva has anesthetic properties so the host doesn't feel anything as it burrows its mouthparts into the skin, deploying multiple barbs to help keep it locked on. It also secretes cement-like saliva that glues the tick into place while it feeds, which dissolves afterward.

Female adult ticks feed continuously while male adult ticks may pause to search for a female that's feeding on the same host. Once the female has fed and mated, she drops to the ground to find a suitable spot to lay thousands of eggs.

DISEASES

Although Rocky Mountain wood ticks can spread Rocky Mountain spotted fever, tularemia, tick-borne relapsing fever, and Colorado tick fever, transmission is rare in Montana. It occurs after a tick feeds on an infected animal then passes it on to the next host through its saliva. The longer a tick feeds, the greater the chance of transmission.

Rocky Mountain wood ticks do not carry Lyme disease, which is transmitted by deer ticks (also called black-legged ticks) found in states east of Montana. Yet Lyme is the most common tick-borne illness in Montana, with around 13 cases per year. All are believed to stem from ticks brought here from other regions of the country, according to the Montana Department of Public Health and Human Services.

Laura Roady is a writer in Bonners Ferry, Idaho.

THE **OUTSIDE** IS IN US ALL.

Whether it's by fishing, camping, skiing, mountain biking, boating, hiking, wildlife watching, or **camping at Moorhead Recreation Site,** Montana is a state where everyone can find their own way to connect with the natural world. Around here, **the outside is in us all.** PHOTO BY CHUCK HANEY

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